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Service Manual

ORDER NO.
CRT1316

CD CONTROL FM/MW/LW TUNER AMPLIFIER

KEH-5001ZRN X1B

KEH-5000ZRN-2 X1B

NOTE: This service manual is designed to be used together with Model KEH-M5000B/EW Service Manual (CRT1236). Refer to it for finding parts numbers and circuit description, etc. which are not shown in this manual.

- This model has been installed in RENAULT. (MATRA ESPACE)

	KEH-5001ZRN	KEH-5000ZRN-2
Part No.	6025 103 902	6025 104 957

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EK OCT. 1990 Printed in Japan

EXPLODED VIEW

● Parts List

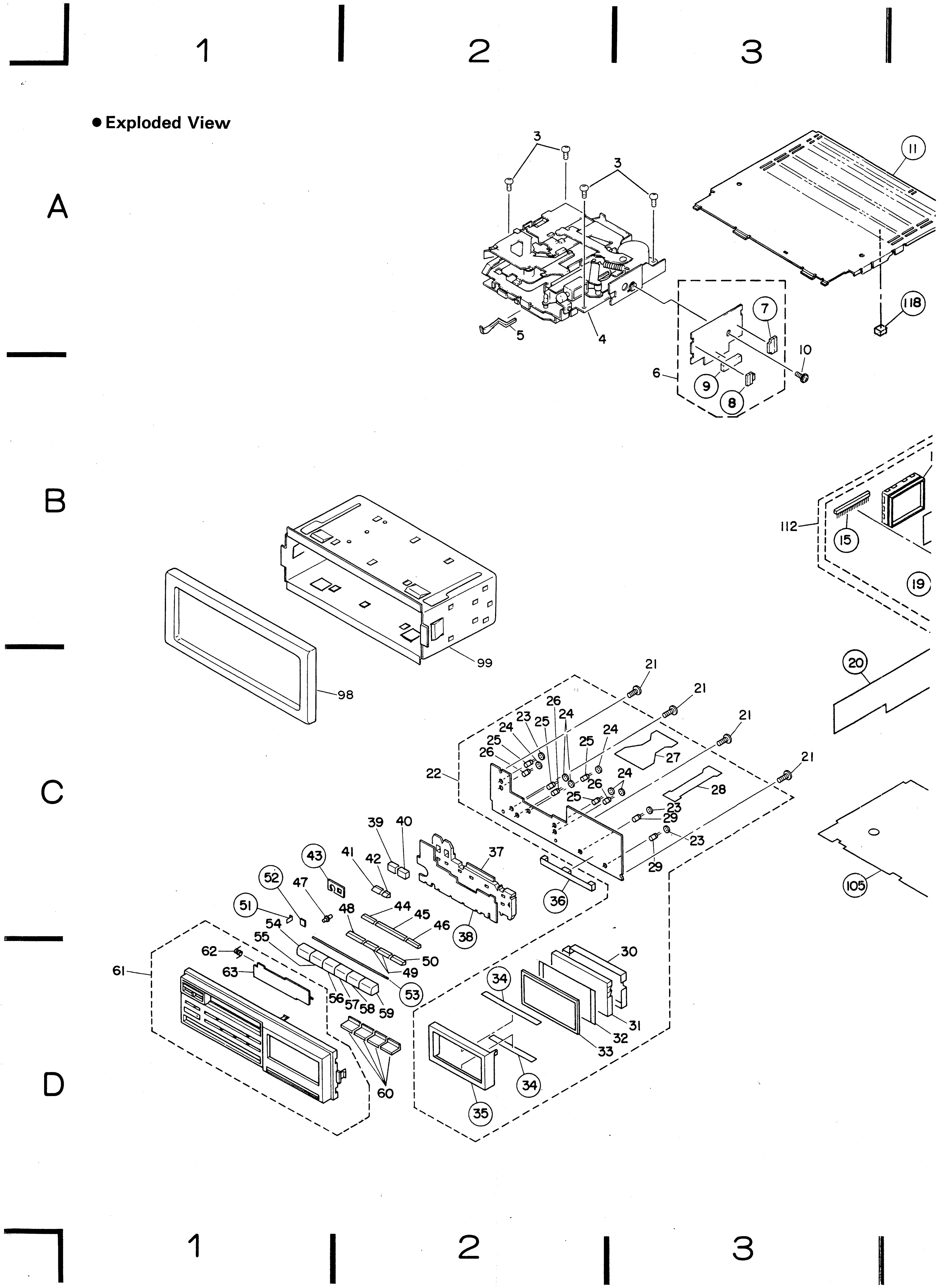
NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Part No.
	1, 2	·····	
	3	Screw	BMZ26P050FMC
◉	4	Cassette Mechanism Assy	EXK1410
	5	Arm	CNV2078
◉	6	Mechanism Control Unit	CWM2026
	7	Connector	
	8	Connector	
	9	Connector	
	10	Screw	CBA1022
	11	Case	
	12	·····	
	13	Insulator	
◉	14	Tuner Unit	CWE1164
	15	Plug	
	16	FM Front End	CWB1037
	17	Insulator	
	18	Antenna Jack	CKX1010
	19	Chassis	
	20	Insulator	
	21	Screw	BPZ20P060FMC
◉	22	Display Unit	CWS1190
	23	Spacer	CNM1642
	24	Bush	CNV-724
	25	Lamp	CEL-147
	26	Lamp	CEL1004
	27	P.C.Board	CNP2094
	28	P.C.Board	CNP2093
	29	Lamp	CEL1115
	30	Housing	CNV2046
	31	Lens	CNV2045
	32	Half Mirror	CNM2314
	33	LCD	CAW1061
	34	Insulator	
	35	Cover	
	36	Cushion	
	37	Lens	CNV2288
	38	Cushion	
	39	Button	CAC1988
	40	Button	CAC1987
	41	Button	CAC1989
	42	Button	CAC1990
	43	Spacer	
	44	Button	CAC1831
	45	Button	CAC1830
	46	Button	CAC1832
	47	Button	CAC1998
	48	Button	CAC2676
	49	Button	CAC1834
	50	Button	CAC1804
	51	Stopper	
	52	Spacer	
	53	Shaft	
	54	Button(1)	CAC2211
	55	Button(2)	CAC2212
	56	Button(3)	CAC2213
	57	Button(4)	CAC2214
	58	Button(5)	CAC2215
	59	Button(6)	CAC2216
	60	Button	CAC1997
	61	Grille Unit (KEH-5001ZRN)	CXA3653
		Grille Unit (KEH-5000ZRN-2)	CXA3366
	62	Spring	CBH1215
	63	Door	CAT1365
	64, 65	·····	
	66	Screw	BMZ30P100FMC
	67	Holder	

Mark	No.	Description	Part No.
	68	IC	TA8215L-A
	69	Heat Sink	
	70	Connector	
	71	Connector	
	72, 73	·····	
	74	Holder	
	75	Plug (8P)	
	76, 77	·····	
	78	Connector (17P)	CKS1265
	79	Connector (9P)	CKS1257
	80	·····	
	81	Plug (6P)	
	82, 83	·····	
	84	Connector (17P)	
	85	Plug (6P)	
	86	Connector (7P)	CKS1717
	87	Screw	BMZ30P050FMC
	88	Holder	
	89	IC	AN6540
	90	Screw	BMZ30P040FMC
	91	Plug (7P)	CKS1751
	92	Holder	
	93—97	·····	
	98	Panel	CNS1403
	99	Holder	CNC3283
	100	Screw	CBA1002
	101	Bush	CNV2529
	102—104	·····	
	105	Insulator	
	106	Screw	BMZ30P060FMC
	107	·····	
	108	Chassis Unit	
	109	·····	
	110	Cap	CNS1472
	111	Resistor	RS1/2P102JL
◉	112	Tuner Amp Unit (KEH-5001ZRN)	CWM2416
◉		Tuner Amp Unit (KEH-5000ZRN-2)	CWM2419
	113	·····	
	114	Connector	
	115	Cord Assy	CDE3193
	116	Holder	
	117	Spacer	
	118	Spacer	
◉	119	Capacitor Unit	CWM2418
	120	Holder	
	121	Holder	
	122	Cord Assy	CDE3217
	123	Screw	CBA1073

● Exploded View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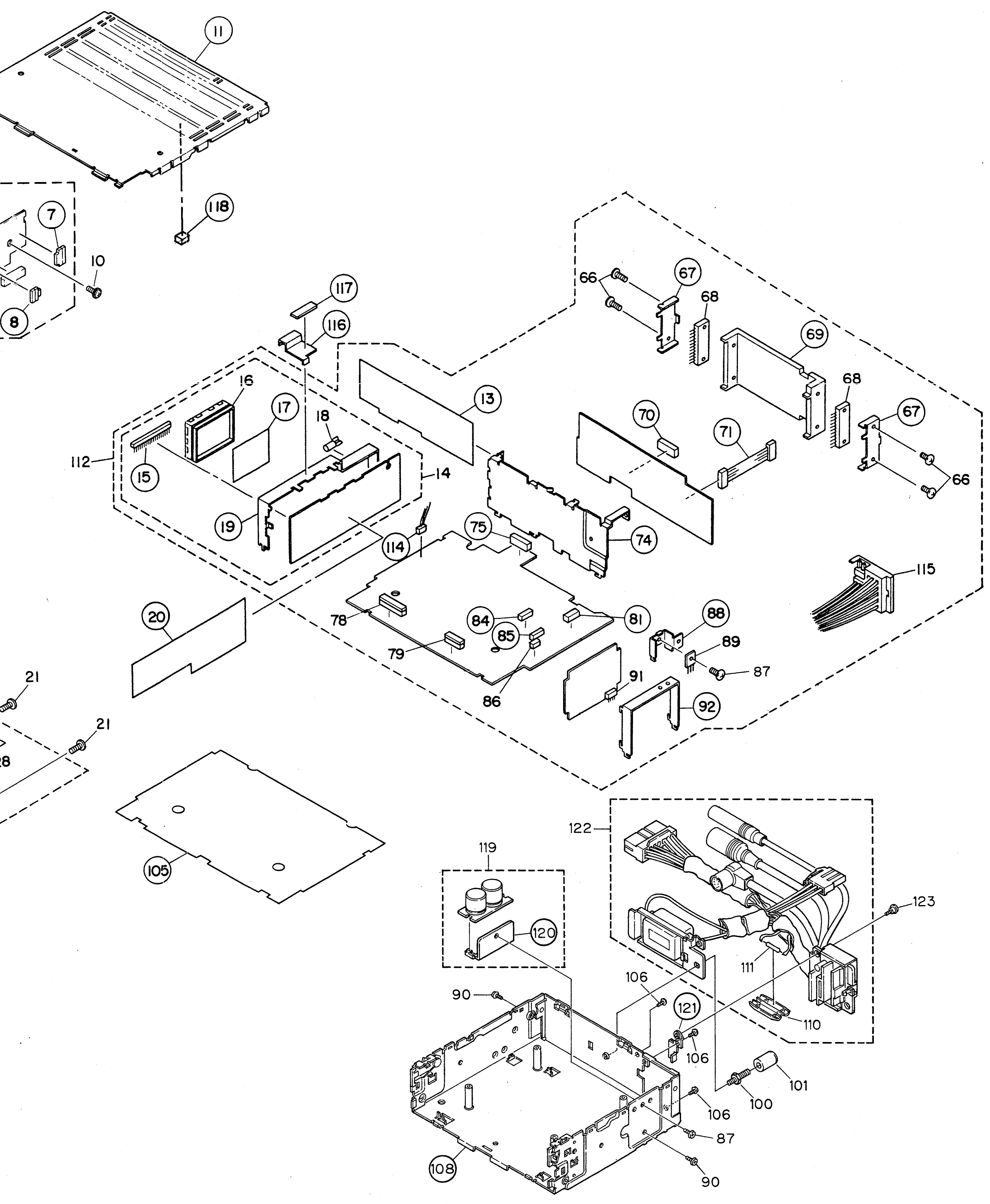
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105
122
119
120
123
111
110
106
121
106
90
101
100
106
87
108
90

Fig. 1

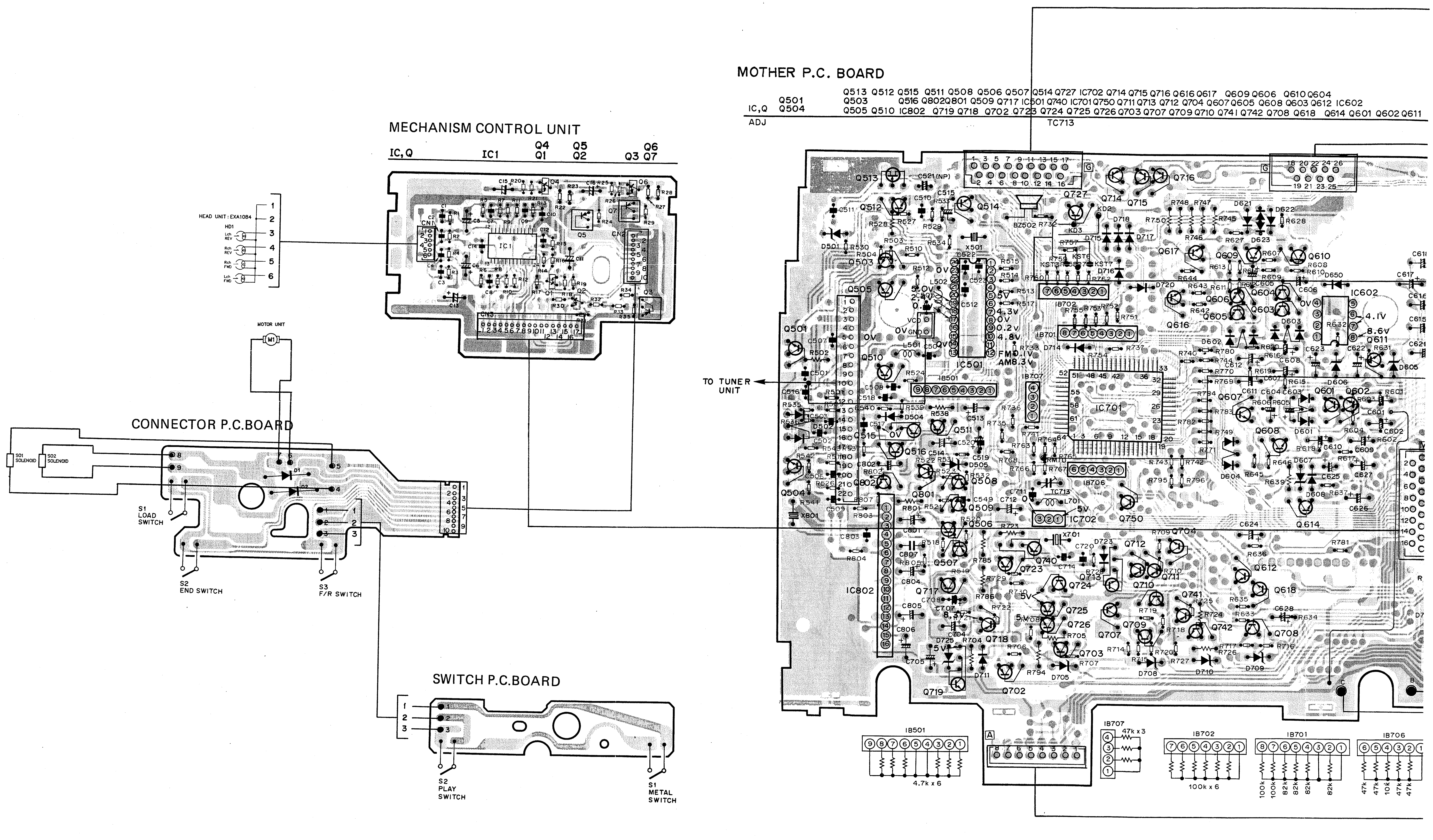
PACKING METHOD

- Parts List (Page 59)

NSP: Non Spare Part

			KEH-M5000	KEH-5001ZRN, KEH-5000ZRN-2	
Mark	No.	Description	Part No.	Part No.	
	1	Carton	CHG1599	·····	Deleted
	4-1	Owner's Manual	CRD1290	·····	Deleted
			CRD1291	·····	Deleted
	4-2	Caution Card	NSP	·····	Deleted
	4-4	Card	NSP	NSP	
	5	Styrofoam (R)	CHP1217	·····	Deleted
	6	Cover	CEG1092	CEG-173	
	7	Styrofoam (L)	CHP1216	·····	Deleted
	9	Accessory Assy	CEA1209	·····	Deleted

CONNECTION DIAGRAM (KEH-5001ZRN)


MECHANISM CONTROL UNIT
IC,Q
IC1
Q4 Q1
Q5 Q2
Q6 Q3 Q7
HEAD UNIT : EXA1084
HD1
Lch REV
Rch REV
Rch FWD
Lch FWD
MOTOR UNIT
M1
CONNECTOR P.C.BOARD
S01 SOLENOID
S02 SOLENOID
D1
D2
S1 LOAD SWITCH
S2 END SWITCH
S3 F/R SWITCH
SWITCH P.C.BOARD
S2 PLAY SWITCH
S1 METAL SWITCH
MOTHER P.C. BOARD
IC,Q
ADJ
Q501 Q504
Q513 Q512 Q515 Q511 Q508 Q506 Q507 Q514 Q727 IC702 Q714 Q715 Q716 Q616 Q617 Q609 Q606 Q610 Q604
Q503 Q516 Q802 Q801 Q509 Q717 IC501 Q740 IC701 Q750 Q711 Q713 Q712 Q704 Q607 Q605 Q608 Q603 Q612 IC602
Q505 Q510 IC802 Q719 Q718 Q702 Q723 Q724 Q725 Q726 Q703 Q707 Q709 Q710 Q741 Q742 Q708 Q618 Q614 Q601 Q602 Q611
TC713
TO TUNER UNIT
IC501
IC701
IC702
IC802
IC602
X501
X701
X801
BZ502
IB501
IB701
IB702
IB706
IB707
4.7k x 6
47k x 3
100k x 6
100k
82k
47k
10k

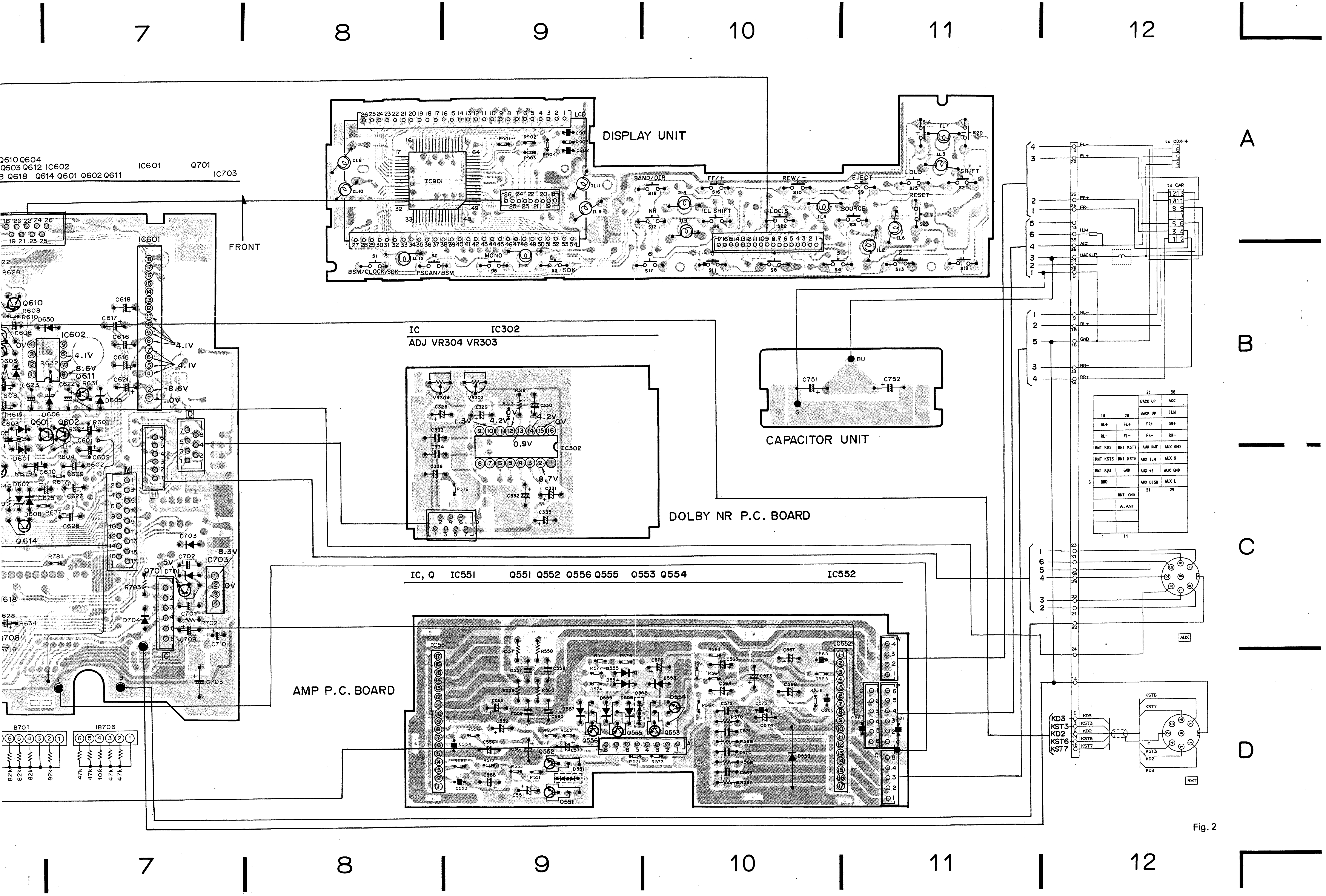
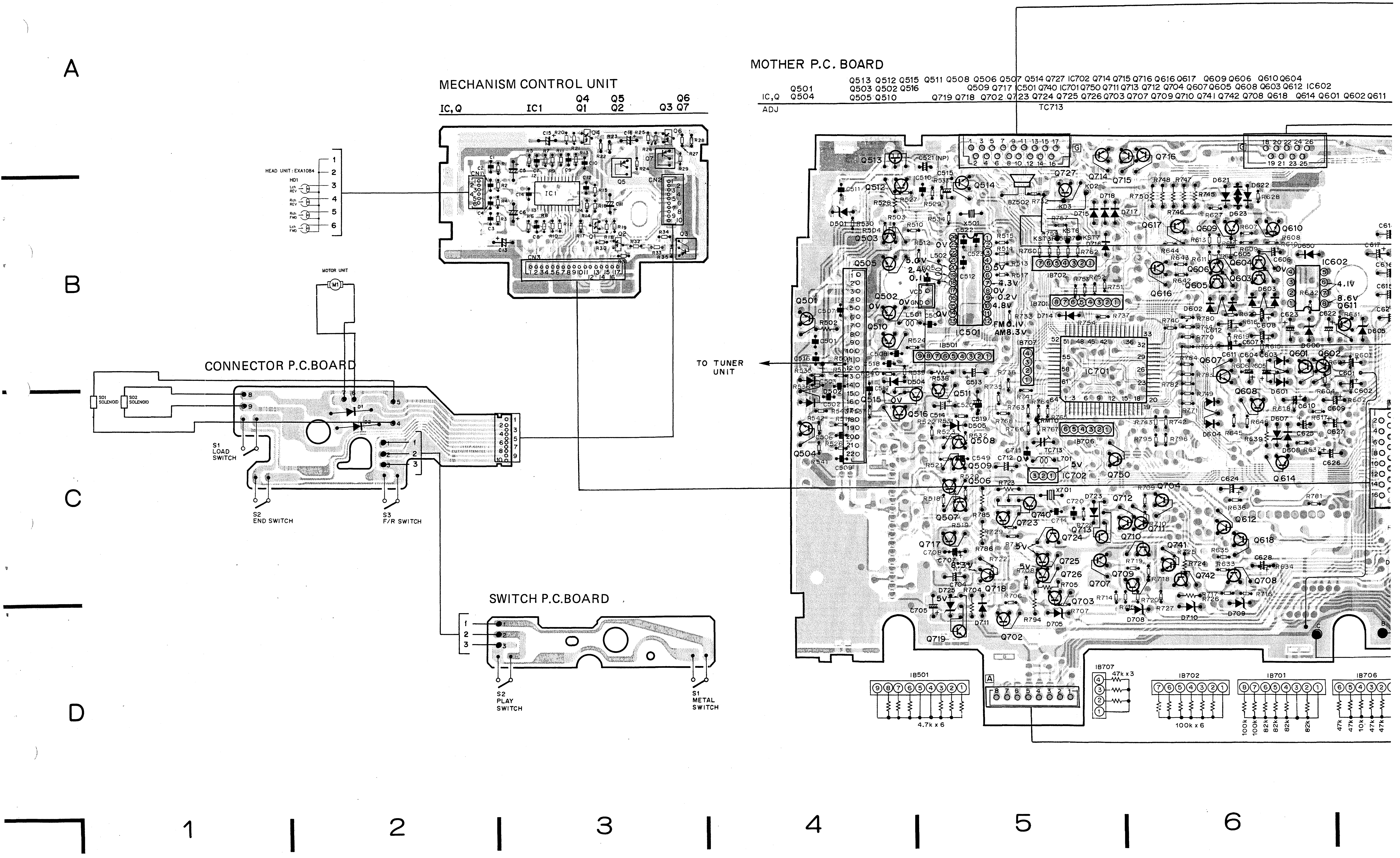

7
8
9
10
11
12
A
B
C
D
DISPLAY UNIT
IC901
LCD
BAND/DIR
FF/+
REW/−
EJECT
LOUD
SHIFT
RESET
NR
ILL SHIFT
LOC.S
SOURCE
MONO
BSM/CLOCK/SDK
PSCAN/BSM
SDK
FRONT
IC601
Q701
IC703
IC602
Q610
Q611
Q601
Q602
Q614
DOLBY NR P.C. BOARD
IC302
ADJ VR304 VR303
CAPACITOR UNIT
C751
C752
BU
G
AMP P.C. BOARD
IC, Q IC551 Q551 Q552 Q556 Q555 Q553 Q554 IC552
IC551
IC552
to CDX-4
to CAR
FL−
FL+
FR+
FR−
ILM
ACC
BACKUP
RL−
RL+
GND
RR−
RR+
KD3
KST3
KD2
KST6
KST7
AUX
RMT
IB701
IB706

Fig. 2

CONNECTION DIAGRAM (KEH-5000ZRN-2)


1
2
3
4
5
6
A
B
C
D
MOTHER P.C. BOARD
IC,Q
ADJ
Q501 Q504
Q513 Q512 Q515 Q503 Q502 Q516 Q505 Q510
TC713
MECHANISM CONTROL UNIT
IC,Q
IC1
Q4 Q1
Q5 Q2
Q3
Q6 Q7
HEAD UNIT : EXA1084
HD1
MOTOR UNIT
M1
CONNECTOR P.C.BOARD
SO1 SOLENOID
SO2 SOLENOID
S1 LOAD SWITCH
S2 END SWITCH
S3 F/R SWITCH
TO TUNER UNIT
SWITCH P.C.BOARD
S2 PLAY SWITCH
S1 METAL SWITCH
IB501
4.7k x 6
IB707
47k x 3
IB702
100k x 6
IB701
IB706
IC701
IC501
IC702
IC602
5.0V
2.4V
4.3V
4.8V
8.6V
4.1V
FM0.1V
AM8.3V

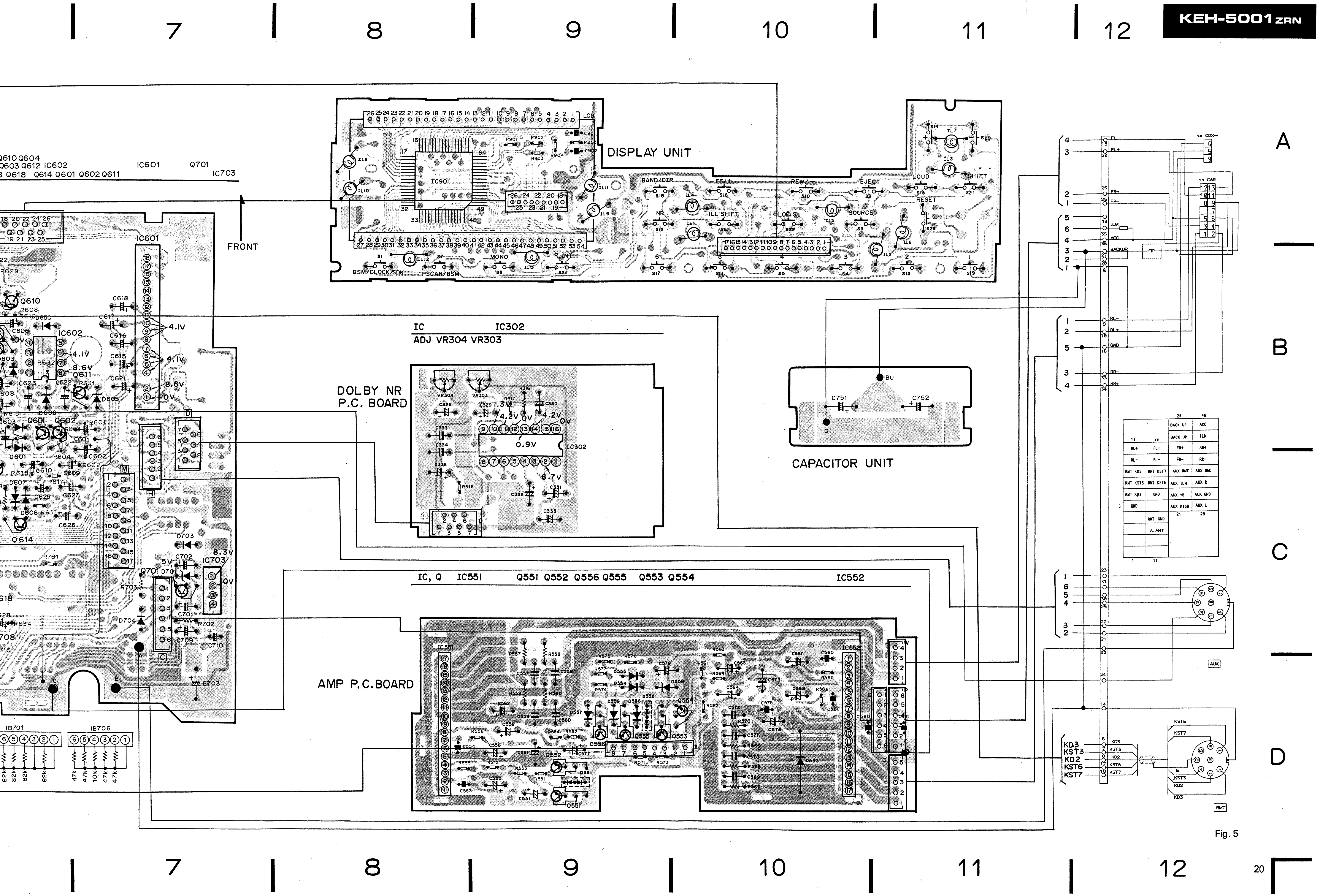
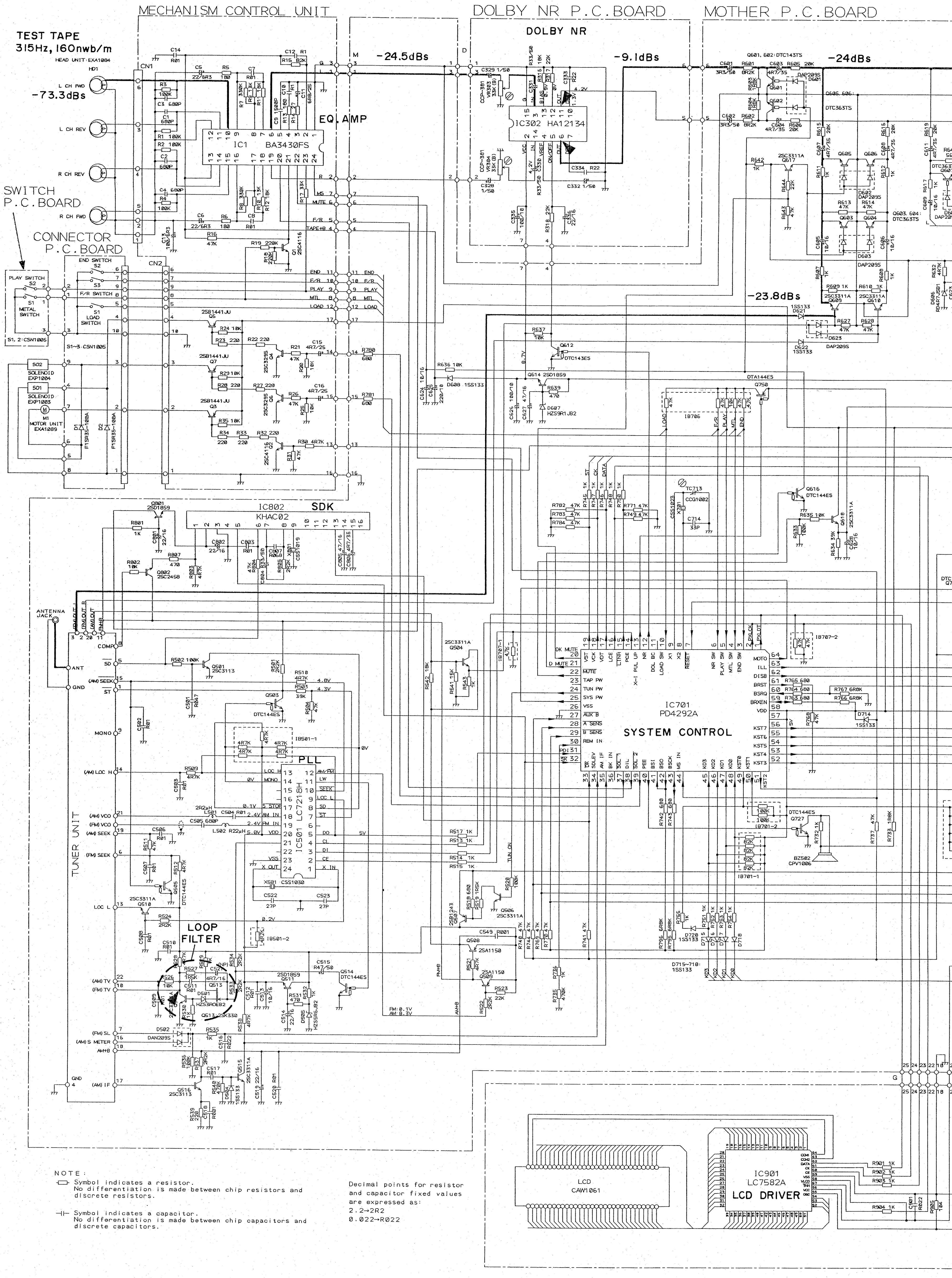

7
8
9
10
11
12
A
B
C
D
DISPLAY UNIT
IC901
LCD
BAND/DIR
FF/+
REW/−
EJECT
LOUD
SHIFT
RESET
NR
ILL SHIFT
LOC. S
SOURCE
BSM/CLOCK/SDK
PSCAN/BSM
MONO
R. INT
FRONT
Q610 Q604
Q603 Q612 IC602
Q618 Q614 Q601 Q602 Q611
IC601
Q701
IC703
IC601
IC602
4.1V
8.6V
0V
8.3V
5V
IB701
IB706
IC ADJ
IC302 VR304 VR303
DOLBY NR P.C. BOARD
IC302
0.9V
4.2V
8.7V
CAPACITOR UNIT
BU
C751
C752
G
IC, Q
IC551
Q551 Q552 Q556 Q555 Q553 Q554
IC552
AMP P.C.BOARD
to CDX
to CAR
KD3
KST3
KD2
KST6
KST7
AUX
RMT

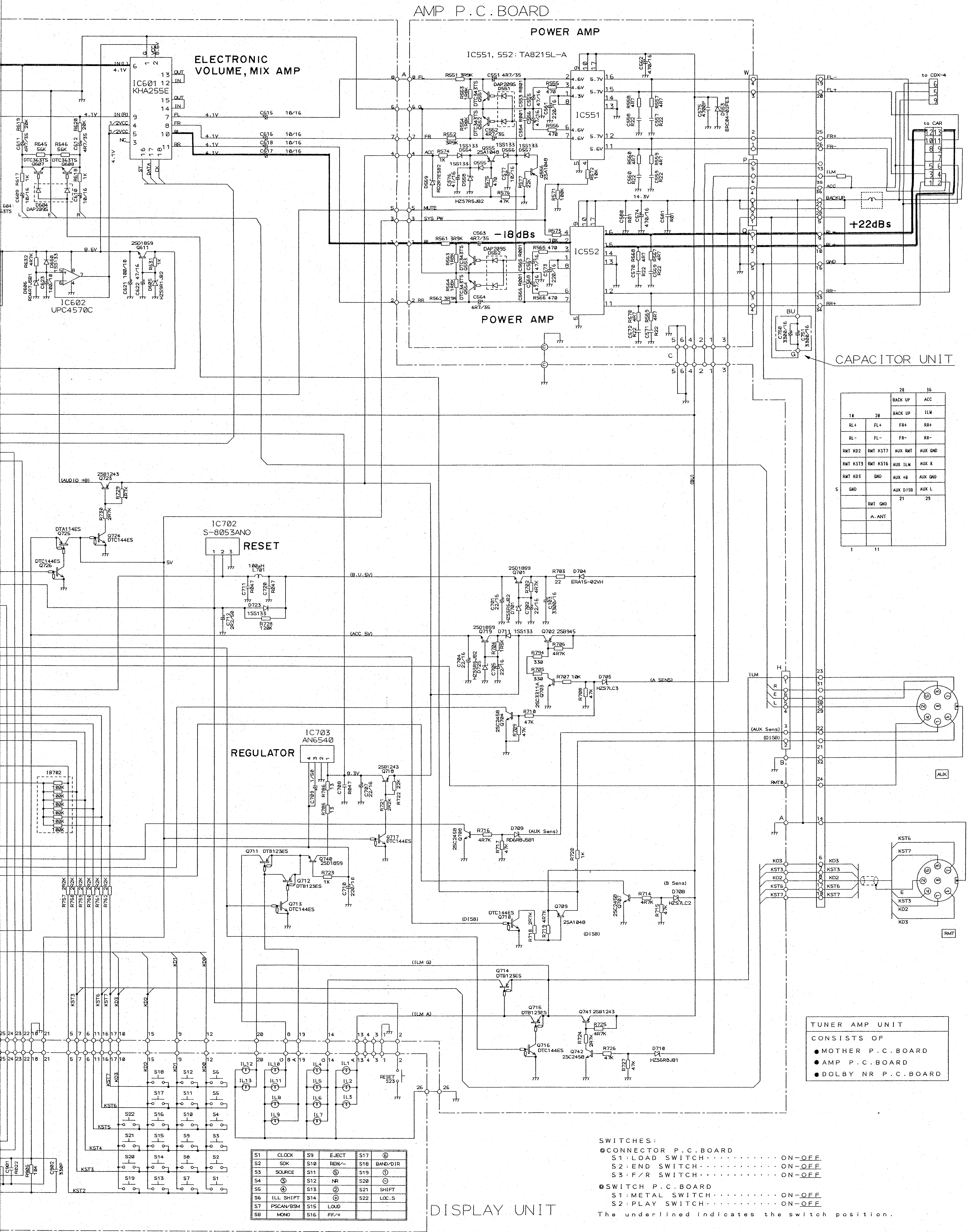
Fig. 5

SCHEMATIC CIRCUIT DIAGRAM (KEH-5001ZRN)


1
2
3
4
A
B
C
D
E
F
MECHANISM CONTROL UNIT
DOLBY NR P.C.BOARD
MOTHER P.C.BOARD
DOLBY NR
TEST TAPE
315Hz, 160nwb/m
HEAD UNIT: EXA1004
HD1
L CH FWD
L CH REV
R CH REV
R CH FWD
-73.3dBs
-24.5dBs
-9.1dBs
-24dBs
-23.8dBs
EQ.AMP
IC1 BA3430FS
IC302 HA12134
CN1
CN2
SWITCH P.C.BOARD
CONNECTOR P.C.BOARD
PLAY SWITCH
METAL SWITCH
F/R SWITCH
LOAD SWITCH
END SWITCH
S1, 2: CSN1005
S1~3: CSN1005
SOLENOID EXP1004
SOLENOID EXP1003
MOTOR UNIT EXA1089
IC802 SDK KHAC02
ANTENNA JACK
TUNER UNIT
PLL
IC501 LC7218
LOOP FILTER
IC701 PD4292A
SYSTEM CONTROL
LCD CAW1061
IC901 LC7582A
LCD DRIVER
BZ502 CPV1006

NOTE:
- ⊏⊐ Symbol indicates a resistor.
  No differentiation is made between chip resistors and discrete resistors.
- ⊣⊢ Symbol indicates a capacitor.
  No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022


AMP P.C.BOARD
POWER AMP
IC551, 552: TA8215L-A
ELECTRONIC VOLUME, MIX AMP
IC601 KHA255E
IC551
IC552
-18dBs
+22dBs
IC602 UPC4570C
CAPACITOR UNIT
to CDX-4
to CAR
IC702 S-8053ANO
RESET
IC703 AN6540
REGULATOR
DISPLAY UNIT
RESET S23
AUX
RMT
20 36
BACK UP ACC
10 20 BACK UP ILM
RL+ FL+ FR+ RR+
RL- FL- FR- RR-
RMT KD2 RMT KST7 AUX RMT AUX GND
RMT KST3 RMT KST6 AUX ILM AUX R
RMT KD3 GND AUX +B AUX GND
5 GND AUX DISB AUX L
21 29
RMT GND
A.ANT
1 11

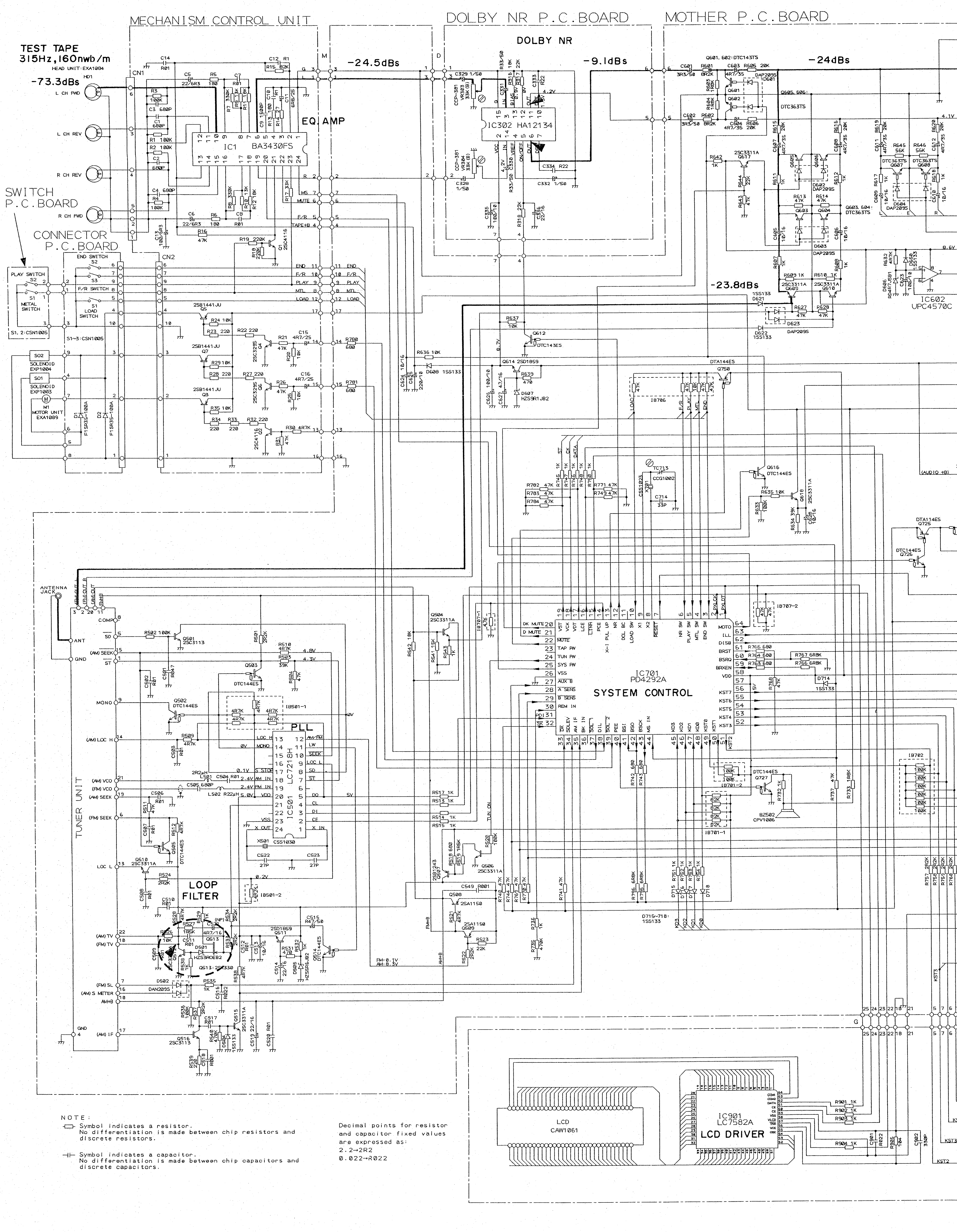
S1	CLOCK	S9	EJECT	S17	⑥
S2	SDK	S10	REW/-	S18	BAND/DIR
S3	SOURCE	S11	⑤	S19	①
S4	③	S12	NR	S20	⊖
S5	④	S13	②	S21	SHIFT
S6	ILL SHIFT	S14	⊕	S22	LOC.S
S7	PSCAN/BSM	S15	LOUD		
S8	MONO	S16	FF/+		

TUNER AMP UNIT
CONSISTS OF
- MOTHER P.C.BOARD
- AMP P.C.BOARD
- DOLBY NR P.C.BOARD

SWITCHES:
◎CONNECTOR P.C.BOARD
S1:LOAD SWITCH············ON-OFF
S2:END SWITCH············ON-OFF
S3:F/R SWITCH············ON-OFF
◎SWITCH P.C.BOARD
S1:METAL SWITCH··········ON-OFF
S2:PLAY SWITCH············ON-OFF
The underlined indicates the switch position.

Fig. 3

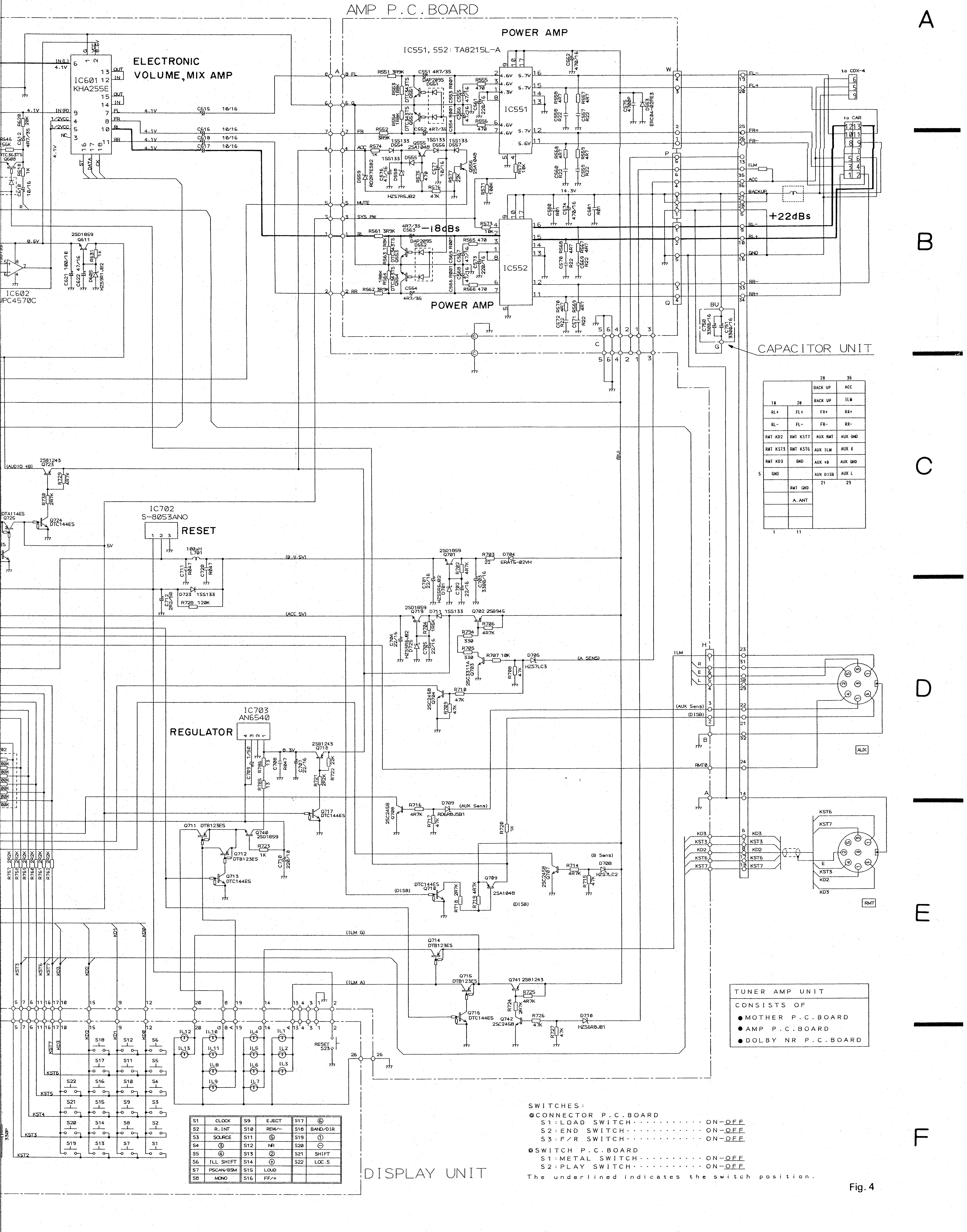
SCHEMATIC CIRCUIT DIAGRAM (KEH-5000ZRN-2)


A
B
C
D
E
F
MECHANISM CONTROL UNIT
DOLBY NR P.C.BOARD
MOTHER P.C.BOARD
DOLBY NR
TEST TAPE
315Hz,160nwb/m
HEAD UNIT:EXA1084
-73.3dBs
-24.5dBs
-9.1dBs
-24dBs
-23.8dBs
EQ. AMP
IC1 BA3430FS
IC302 HA12134
IC602 UPC4570C
SWITCH P.C.BOARD
CONNECTOR P.C.BOARD
PLAY SWITCH
METAL SWITCH
END SWITCH
F/R SWITCH
LOAD SWITCH
SOLENOID EXP1004
SOLENOID EXP1003
MOTOR UNIT EXA1089
ANTENNA JACK
TUNER UNIT
PLL
IC501 LC7218H
LOOP FILTER
IC701 PD4292A
SYSTEM CONTROL
LCD CAW1061
IC901 LC7582A
LCD DRIVER
BZ502 CPV1006

NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022


A
B
C
D
E
F
AMP P.C.BOARD
POWER AMP
IC551, 552: TA8215L-A
ELECTRONIC VOLUME, MIX AMP
IC601 KHA255E
IC602 UPC4570C
IC551
IC552
-18dBs
+22dBs
POWER AMP
to CDX-4
to CAR
CAPACITOR UNIT
IC702 S-8053ANO
RESET
REGULATOR
IC703 AN6540
(B.U.5V)
(ACC 5V)
(A SENS)
(AUX Sens)
(B Sens)
(DISB)
(ILM G)
(ILM A)
(AUDIO +B)
AUX
RMT
RESET S23
DISPLAY UNIT

S1	CLOCK	S9	EJECT	S17	⑥
S2	R.INT	S10	REW/−	S18	BAND/DIR
S3	SOURCE	S11	⑤	S19	①
S4	③	S12	NR	S20	⊖
S5	④	S13	②	S21	SHIFT
S6	ILL SHIFT	S14	⊕	S22	LOC.S
S7	PSCAN/BSM	S15	LOUD		
S8	MONO	S16	FF/+		

			28	36
			BACK UP	ACC
	10	20	BACK UP	ILM
	RL+	FL+	FR+	RR+
	RL-	FL-	FR-	RR-
	RMT KD2	RMT KST7	AUX RMT	AUX GND
	RMT KST3	RMT KST6	AUX ILM	AUX R
	RMT KD3	GND	AUX +B	AUX GND
5	GND		AUX DISB	AUX L
		RMT GND	21	29
		A.ANT		
	1	11		

TUNER AMP UNIT
CONSISTS OF ● MOTHER P.C.BOARD ● AMP P.C.BOARD ● DOLBY NR P.C.BOARD

SWITCHES:

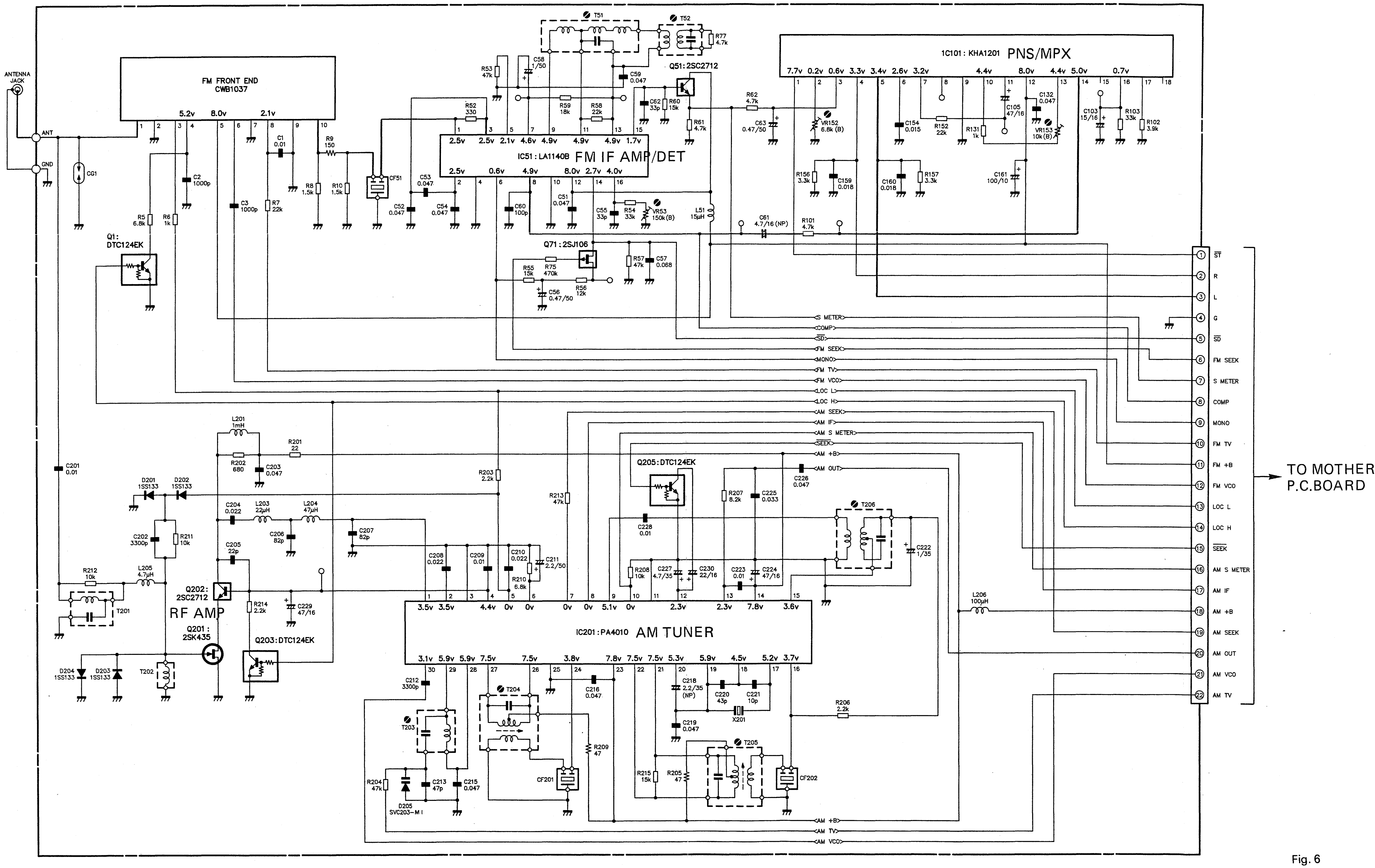
◎CONNECTOR P.C.BOARD
S1:LOAD SWITCH············ON-OFF
S2:END SWITCH·············ON-OFF
S3:F/R SWITCH·············ON-OFF

◎SWITCH P.C.BOARD
S1:METAL SWITCH···········ON-OFF
S2:PLAY SWITCH············ON-OFF

The underlined indicates the switch position.

Fig. 4

TUNER UNIT


ANTENNA JACK
ANT
GND
CG1
FM FRONT END CWB1037
5.2v 8.0v 2.1v
Q1: DTC124EK
IC51 : LA1140B FM IF AMP/DET
Q51 : 2SC2712
T51
T52
CF51
L51 15μH
Q71 : 2SJ106
VR53 150k (B)
IC101 : KHA1201 PNS/MPX
7.7v 0.2v 0.6v 3.3v 3.4v 2.6v 3.2v 4.4v 8.0v 4.4v 5.0v 0.7v
VR152 6.8k (B)
VR153 10k (B)
C61 4.7/16 (NP)
IC201 : PA4010 AM TUNER
Q202 : 2SC2712
RF AMP
Q201 : 2SK435
Q203 : DTC124EK
Q205 : DTC124EK
D201 1SS133
D202 1SS133
D203 1SS133
D204 1SS133
D205 SVC203-M I
T201
T202
T203
T204
T205
T206
CF201
CF202
X201
L206 100μH
S METER
COMP
SD
FM SEEK
MONO
FM TV
FM VCO
LOC L
LOC H
AM SEEK
AM IF
AM S METER
SEEK
AM +B
AM OUT
AM TV
AM VCO
① ST
② R
③ L
④ G
⑤ SD
⑥ FM SEEK
⑦ S METER
⑧ COMP
⑨ MONO
⑩ FM TV
⑪ FM +B
⑫ FM VCO
⑬ LOC L
⑭ LOC H
⑮ SEEK
⑯ AM S METER
⑰ AM IF
⑱ AM +B
⑲ AM SEEK
⑳ AM OUT
㉑ AM VCO
㉒ AM TV
TO MOTHER P.C.BOARD

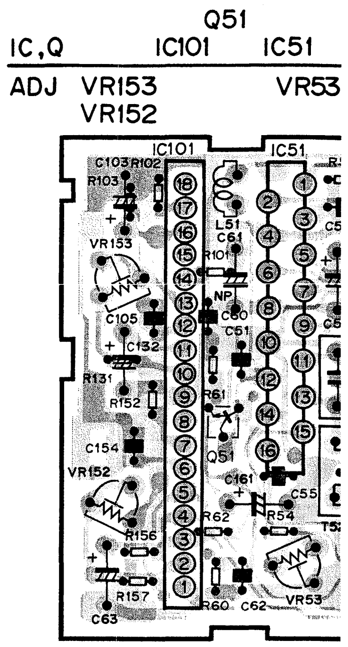
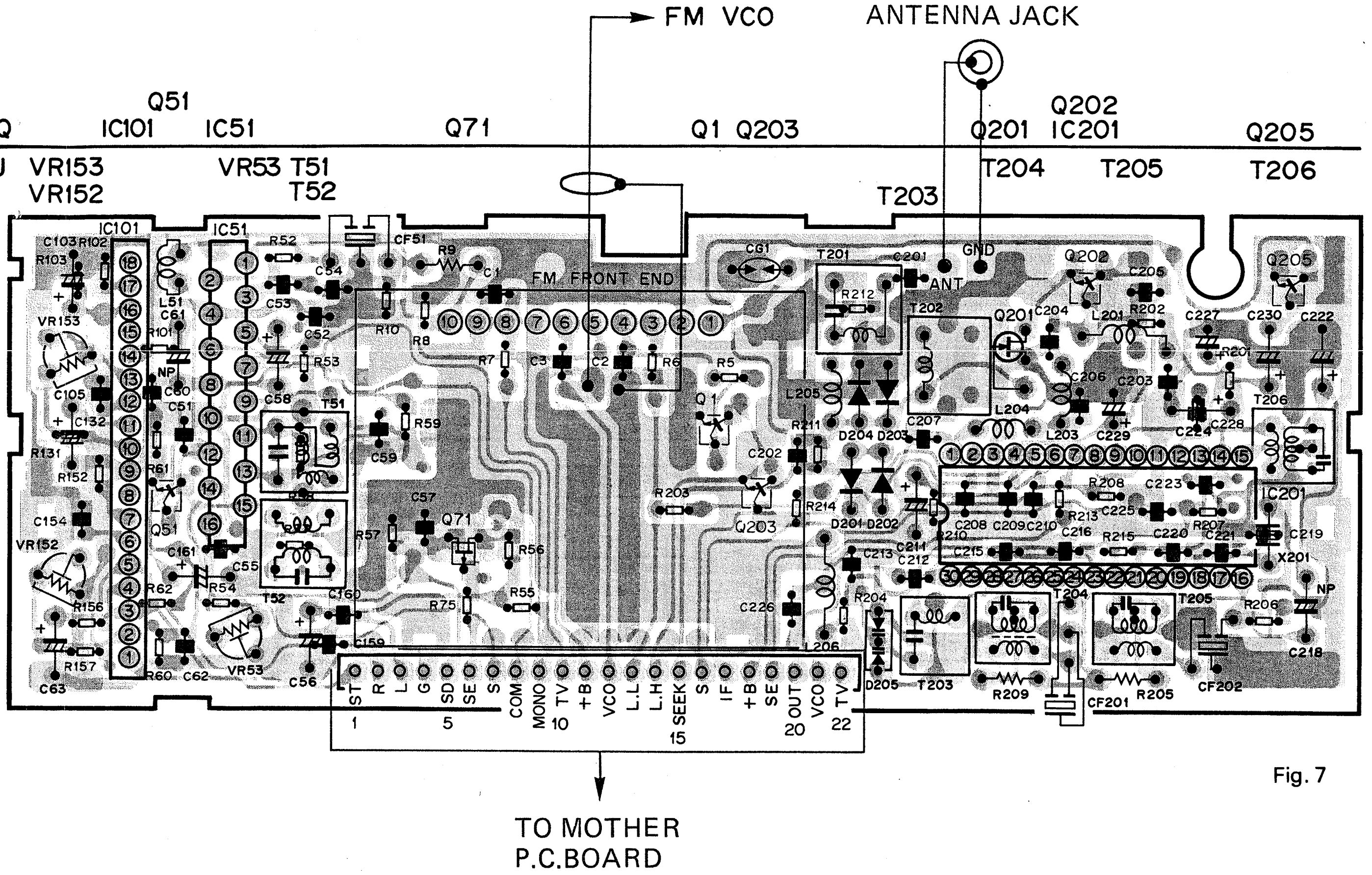

IC,Q
ADJ
Q51
IC101
IC51
VR153
VR152
VR53
IC101
IC51
C103
R102
R103
VR153
L51
C61
R101
C105
C132
C60
C51
R131
R152
R61
C154
VR152
Q51
C161
R156
R62
R54
C55
R157
C63
R60
C62
VR53

Fig. 6


FM VCO
ANTENNA JACK
Q51
IC101
IC51
Q71
Q1 Q203
Q202
Q201 IC201
Q205
VR153
VR152
VR53 T51
T52
T203
T204
T205
T206
FM FRONT END
ANT
GND
ST
R
L
G
SD
SE
S
COM
MONO
TV
+B
VCO
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L.H
SEEK
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SE
OUT
VCO
TV
1
5
10
15
20
22
TO MOTHER
P.C.BOARD

Fig. 7

ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor
RS1/8S □□□J, RS1/10S □□□J
Chip Capacitor (except for CQS.....)
CKS....., CCS....., CSZS.....

Unit Number :
Unit Name : Tuner Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
	IC 51		LA1140B
	IC 101		KHA1201
	IC 201		PA4010
	Q 1 203 205	Chip Transistor	DTC124EK
	Q 51 202	Chip Transistor	2SC2712
	Q 71	Chip Transistor	2SJ106
	Q 201		2SK435
	D 201 202 203 204		1SS133
	D 205		SVC203-M1
	L 51	Inductor	LAU150K
	L 201	Inductor	CTF1084
	L 203	Ferri-Inductor	LAU220K .
	L 204	Ferri-Inductor	LAU470K
	L 205	Ferri-Inductor	LAU4R7K
	L 206	Ferri-Inductor	CTF-157
	T 51	Coil	CTE1021
	T 52	Coil	CTE1022
	T 201	Coil	CTB1020
	T 202	Coil	CTB1004
	T 203	Coil	CTB1040
	T 204	Coil	CTE1037
	T 205	Coil	CTE1038
	T 206	Coil	CTE1039
	CG 1	Surge Protector	DSP-201M
	CF 51	Ceramic Filter	CTF-182
	CF 201	Ceramic Filter	CTF1041
	CF 202	Filter	CTF1085
	X 201	Crystal Resonator	CSS1057
	VR 53	Semi-fixed 150kΩ (B)	VRTB4VS154
	VR 152	Semi-fixed 6.8kΩ (B)	VRTB4VS682
	VR 153	Semi-fixed 10kΩ (B)	VRTB4VS103
		FM Front End	CWB1037

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 5 210		RS1/10S682J
	R 6 131		RS1/10S102J
	R 7 58 152		RS1/10S223J
	R 8 10		RS1/10S152J
	R 9		RD1/4PS151JL
	R 52		RS1/10S331J
	R 53 57 204 213		RS1/10S473J
	R 54 103		RS1/10S333J
	R 55 60 215		RS1/10S153J
	R 56		RS1/10S123J
	R 59		RS1/10S183J
	R 61 62 77 101		RS1/10S472J
	R 75		RS1/10S474J
	R 102		RS1/10S392J
	R 156 157		RS1/10S332J
	R 201		RS1/10S220J
	R 202		RS1/10S681J
	R 203 206 214		RS1/10S222J
	R 205 209		RD1/4PS470JL
	R 207		RS1/10S822J
	R 208 211 212		RS1/10S103J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 1 201 209 223 228 -		CKSQYB103K25
	C 2 3		CKSQYB102K50
	C 51 52 53 54 59 132 203 215 216 219		CKSQYF473Z50
	C 55 62		CCSQSL330J50
	C 56 63		CEAR47M50LS2
	C 57		CKSYB683K25
	C 58		CEA010M50LS2
	C 60		CCSQSL101J50
	C 61		CEA4R7M16NPLL
	C 103		CEA150M16LS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 105 224		CEA470M16LS
	C 154		CKSQYB153K25
	C 159 160		CKSQYB183K25
	C 161		CEA101M10LS
	C 202 212		CKSQYB332K50
	C 204 208 210		CKSQYB223K25
	C 205		CCSQCH220J50
	C 206 207		CCSQCH820J50
	C 211		CEA2R2M50LS2
	C 213		CCSQCH470J50
	C 218		CEA2R2M35NPLL
	C 220		CCSQCH430J50
	C 221		CCSQCH100D50
	C 222		CSZA010K35L
	C 225		CKSQYB333K25
	C 226		CKSQYF473Z50
	C 227		CEA4R7M35LS
	C 229		CEA470M16LS
	C 230		CEA220M16LS

Unit Number :
Unit Name : Mechanism Control Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
	IC 1		BA3430FS
	Q 1 2	Chip Transistor	2SC4116
	Q 3 5 7	Chip Transistor	2SB1441JU
	Q 4 6	Chip Transistor	2SC3295

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 1 2 3 4		RS1/10S104J
	R 5 6 13		RS1/10S181J
	R 7 8		RS1/10S334J
	R 9 10		RS1/10S133J
	R 11 12		RS1/10S183J
	R 14		RS1/10S270J
	R 15		RS1/10S823J
	R 16 21 26 31		RS1/10S473J
	R 17		RS1/10S333J
	R 18 19		RS1/10S224J
	R 20 24 25 29 35		RS1/10S103J
	R 22 23 27 28 32 33 34		RS1/8S221J
	R 30		RS1/10S472J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 1 2 3 4		CKSQYB681K50
	C 5 6	22μF/6.3V	CCH1065
	C 7 8 14		CKSQYB103K50
	C 9		CKSQYB152K50
	C 10 12		CKSYB104K25
	C 11	6.8μF/25V	CCH1066
	C 13	100μF/6.3V	CCH1067
	C 15 16	4.7μF/25V	CCH1064

Tuner Amp Unit

Consists of
- Mother P.C.Board
- Dolby NR P.C.Board
- Amp P.C.Board

Unit Number :
Unit Name : Tuner Amp Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part
	IC 302		HA121
	IC 501		LC721
	IC 551 552		TA821
	IC 601		KHA25
	IC 602		UPC45
	IC 701		PD429
	IC 702		S-805
	IC 703		AN654
	IC 802 (KEH-5001ZRN)		KHAC0
	Q 501 516		2SC31
	Q 502 (KEH-5000ZRN-2)		DTC14
	Q 503 505 514 616		DTC14
	Q 504 506 510 512 515 609 610 617 618 703		2SC33
	Q 507 718 723 741		2SB12
	Q 508 509		2SA11
	Q 511 611 614 701 719 740		2SD18
	Q 513		2SK33
	Q 551 552 553 554		DTC34
	Q 555 556 709		2SA10
	Q 601 602		DTC14
	Q 603 604 605 606 607 608		DTC36
	Q 612		DTC14
	Q 702		2SB94
	Q 704 707 708 742		2SC24
	Q 710 713 716 717 724 726 727		DTC14
	Q 711 712 714 715		DTB12
	Q 725		DTA11
	Q 750		DTA14
	Q 801 (KEH-5001ZRN)		2SD18
	Q 802 (KEH-5001ZRN)		2SC24
	D 501		HZS3R
	D 502		DAN20
	D 504 554 555 556 557 608 621 622 650		1SS13
	D 505 701 725		HZS5R
	D 551 552 601 602 603 604 623		DAP20
	D 553		ERC04
	D 558		HZS7R
	D 559		RD2R7
	D 605 607		HZS9R
	D 606		RD4R7
	D 704		ERA15
	D 705		HZS7L
	D 708		HZS7L
	D 709		RD6R
	D 710		HZS6
	D 711 714 715 716 717 718 723		1SS1
	D 720 (KEH-5001ZRN)		1SS1
	L 501	Ferri-Inductor	LAU2
	L 502	Inductor	LAUR
	L 701	Ferri-Inductor	LAU1

Mark	Circuit Symbol & No.	Part Name	Part No.
	TC 713	Trimmer	CCG1002
	IB 501		CWW1272
	IB 701		CWW1273
	IB 702		CWW1274
	IB 706		CWW1276
	IB 707		CWW1049
	X 501	Crystal Resonator	CSS1030
	X 701	Crystal Resonator	CSS1023
	X 801 (KEH-5001ZRN)	Ceramic Resonator	CSS1019
	VR 303 304	Semi-fixed 33kΩ (B)	CCP-381
	BZ 502	Buzzer	CPV1006
		Tuner Unit	

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 316		RD1/4PS183JL
	R 317 318 523 577		RS1/10S223J
	R 501 522 524 533 534 537		RS1/10S222J
	R 502		RD1/4PS104JL
	R 503 634		RS1/10S393J
	R 504 511 576 613 614 627 628 643 717		RS1/10S473J
	R 509 510 512 521 632		RS1/10S472J
	R 513 514 515 517 529 530 532 535 543		RS1/10S102J
	R 518 742 743 763 764 765 780 781		RS1/10S681J
	R 519 527		RS1/10S152J
	R 520 536 571 633		RS1/10S104J
	R 526 572 573 635 636 637 707		RS1/10S103J
	R 528 538 702		RD1/4PS472JL
	R 531 575		RS1/10S471J
	R 539		RS1/10S221J
	R 540 735		RS1/10S474J
	R 541		RS1/10S153J
	R 542		RS1/10S183J
	R 551 552 561 562		RS1/10S392J
	R 553 554 563 564 603 604 733		RS1/10S182J
	R 555 556 565 566		RS1/10S471J
	R 557 558 559 560 567 568 569 570		RD1/4PS4R7JL
	R 574 607 608 609 610 611 612 617 618 720		RS1/10S102J
	R 601 602		RS1/10S822J
	R 605 606 615 616 619 620		RS1/10S203J
	R 631 642 732 736 751 752 753		RS1/10S102J
	R 639		RD1/4PS471JL
	R 644 722		RS1/10S223J
	R 645 646		RS1/10S563J
	R 703		RD1/4PS220JL
	R 704		RD1/4PS152JL
	R 705 794		RD1/4PS331JL
	R 706 714 716 719 725 729		RS1/10S472J
	R 708 709 710 715 727 737 740 741 744		RS1/10S473J
	R 718 730		RS1/10S272J
	R 721 757 758 759 760 761 762		RS1/10S222J
	R 723 745 746 747 748 750		RD1/4PS102JL
	R 724		RD1/4PS272JL
	R 726		RD1/4PS473JL
	R 728		RS1/10S124J
	R 749 768 769 770 771 782 783 784		RS1/10S473J
	R 754		RS1/10S102J
	R 755 (KEH-5001ZRN)		RS1/10S102J
	R 766 767 795 796		RS1/10S682J
	R 785 786		RD1/4PS130JL
	R 801 (KEH-5001ZRN)		RD1/4PS102JL
	R 802 (KEH-5001ZRN)		RS1/10S103J
	R 803 (KEH-5001ZRN)		RS1/10S472J
	R 804 (KEH-5001ZRN)		RS1/10S473J
	R 805 (KEH-5001ZRN)		RS1/10S222J
	R 807 (KEH-5001ZRN)		RS1/10S471J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 328 329 332		CEA010M50LS2
	C 330 331		CEAR33M50LS2
	C 333 334		CQEA224J63
	C 335 623 626		CEA101M10LS
	C 336 514 519 704 705 707		CEA220M16LS
	C 501 708 711 720		CKSQYF473Z25
	C 502 503 504 506 507 508 509 510 511 512		CKSQYB103K50
	C 505		CKSQYB681K50
	C 513 605 606 624		CEA100M16LS2
	C 515		CEAR47M50LS2
	C 516		CKSQYB223K25
	C 517 520 580 581		CKSQYB103K50
	C 518 549 553 554 565 566		CKSQYB102K50
	C 521	4.7μF/16V	CCH1005
	C 522 523		CCSQCH270J50
	C 551 552 563 564		CEHAS4R7M35
	C 555 556 567 568 576		CEHAS470M16
	C 557 558 559 560 569 570 571 572		CQEA224J63
	C 561 573	220μF/16V	CCH1063
	C 562 574		CEHAQ471M16
	C 575		CKSQYB472K50
	C 577		CEHAS100M16
	C 601 602		CEA3R3M50LS
	C 603 604 607 608 611 612		CEA4R7M35LS
	C 609 610 615 616 617 618		CEA100M16LS2
	C 621		CEA101M10L2
	C 622 627		CEA470M16LS
	C 625		CEA221M10L2
	C 628		CEA100M16LS2
	C 701 702		CEA220M16L2
	C 703	3300μF/16V	CCH1037
	C 709		CEA010M50L2
	C 710	220μF/10V	CCH1015
	C 712		CEA2R2M50LS2
	C 714		CCSQCH330J50
	C 801 (KEH-5001ZRN) 802 (KEH-5001ZRN)		CEA220M16LS
	C 803 (KEH-5001ZRN)		CKSQYB103K50
	C 804 (KEH-5001ZRN)		CEAR33M50LS2
	C 805 (KEH-5001ZRN)		CEA470M16LS
	C 806 (KEH-5001ZRN)		CEA4R7M35LS
	C 807 (KEH-5001ZRN)		CQEA683J50

Unit Number :
Unit Name : Display Unit

Mark	Circuit Symbol & No.	Part Name	Part No.
	IC 901		LC7582A
	S 1 2 3 4 5 6 7 8	Switch	CSG-255
	S 9 10 11 12 13 14 15 16	Switch	CSG-255
	S 17 18 19 20 21 22 23	Switch	CSG-255
	IL 1 2 3	Lamp 14V 40mA	CEL1004

Mark	Circuit Symbol & No.	Part Name	Part No.
	IL 4 5 6 7	Lamp 14V 40mA	CEL-147
	IL 8 9	Lamp 8V 60mA	CEL1117
	IL 10 11	Lamp 8V 60mA	CEL1116
	IL 12 13	Lamp 8V 60mA	CEL1115
		LCD	CAW1061
	R 901 902 903 904		RS1/10S102J
	R 905		RS1/10S104J
	C 901		CKSQYB223K25
	C 902		CCSQCH331J50

Unit Number :
Unit Name : Capacitor Unit

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 750 751	3300μF/16V	CCH1037

Unit Number :
Unit Name : Connector P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
	D 1 2		F1SR35-100A
	S 1 2 3	Switch(LOAD, END, F/R)	CSN1005

Unit Number :
Unit Name : Switch P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
	S 1 2	Switch(METAL, PLAY)	CSN1005

Miscellaneous Parts List

Mark	Circuit Symbol & No.	Part Name	Part No.
	HD 1	Head Unit	EXA1084
	M 1	Motor Unit	EXA1089
	SO 1	Solenoid	EXP1003
	SO 2	Solenoid	EXP1004

XR 236

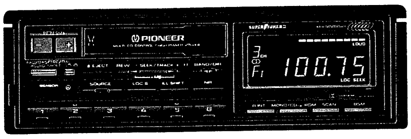
2606

Service Manual

PIONEER®
The future of sound and vision.

Original

• KEH-M5000QR/ES



ORDER NO.
CRT 1236

MULTI-CD CONTROL FM/MW/LW TUNER AMPLIFIER

KEH-M5000SDK WG

KEH-M5000B EW

MULTI-CD CONTROL FM/AM TUNER DECK AMPLIFIER

KEH-M5000QR ES

Note:
- See the service manual KEX-M800 (CRT1234) for the cassette mechanism description.

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26C

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EK JULY 1989 Printed in Japan

1. SPECIFICATIONS

General

Power source	14.4 V DC (10.8-15.6 V allowable)
Grounding system	Negative type
Max. current consumption	7.5 A
Weight	1.6 kg

KEH-M5000SDK/WG, KEH-M5000B/EW

Dimensions (chassis)	180(W) × 50(H) × 152(D) mm
(front face)	188(W) × 58(H) × 12(D) mm

KEH-M5000QR/ES

Dimensions (chassis)	178(W) × 50(H) × 155(D) mm
(nose)	188(W) × 58(H) × 12(D) mm
(mounting bracket)	182(W) × 52(H) × 166(D) mm

Amplifier (KEH-M5000SDK/WG, KEH-M5000B/EW)

Maximum power output	25W × 4 (EIAJ)
Continuous power output	13W × 4 (1% dist. at 1 kHz)
Load impedance	4Ω (4–8Ω allowable)
Max. output level/ output impedance (pre out)	250 mV/1 kΩ
Tone controls (bass)	±10 dB (100 Hz)
(treble)	±10 dB (10 kHz)
Loudness controur	+12 dB (100 Hz), +7 dB (10 kHz) (volume: −30 dB)

Amplifier (KEH-M5000QR/ES)

Maximum power output	25W × 4 (EIAJ)
Continuous power output	13W × 4 (1% dist. at 1 kHz)

Continuous power output is 11W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 54% THD.

Load impedance	4Ω (4–8Ω allowable)
Max. output level/ output impedance (pre out)	500 mV/1 kΩ
Tone controls (bass)	±10 dB (100 Hz)
(treble)	±10 dB (10 kHz)
Loudness contour	+12 dB (100 Hz), +7 dB (10 kHz) (volume: −30 dB)

Tape player

Tape	Compact cassette tape (C-30–C-90)
Tape speed	4.76 cm/sec. (+0.14 cm/sec., −0.05 cm/sec.)
Fast forward/rewing time	Approx. 100 sec. for C-60
Wow & flutter	0.08% (WRMS)
Frequency response	Metal: 30–19,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	Metal: Dolby B NR IN: 66 dB (IEC-A network) Dolby NR OUT: 60 dB (IEC-A network)

FM tuner

Frequency range (KEH-M5000SDK/WG, KEH-M5000B/EW)	87.5–108 MHz
Frequency range (KEH-M5000QR/ES)	87.9–107.9 MHz (200 kHz) 87.5–108 MHz (50 kHz)
Usable sensitivity	11 dBf (1.0 µV/75Ω, mono)
50 dB quieting sensitivity	16 dBf (1.7 µV/75Ω, mono)
Signal-to-noise ratio	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30–15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)

MW tuner (KEH-M5000SDK/WG, KEH-M5000B/EW)

Frequency range	531–1,602 kHz
Usable sensitivity	18 µV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)

AM-Tuner (KEH-M5000QR/ES)

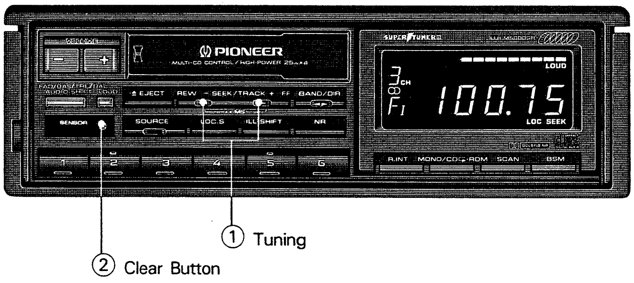
Frequency range	530–1,710 kHz (10 kHz) 531–1,602 kHz (9 kHz)
Usable sensitivity	18 µV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±10 kHz) 50 dB (±9 kHz)

LW tuner (KEH-M5000SDK/WG, KEH-M5000B/EW)

Frequency range	153–281 kHz
Usable sensitivity	30 µV (30 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

2. CHANGING THE TUNING STEPS (KEH-M5000QR/ES)



1. Turn the ignition switch off.
2. While pressing both the (+) and the (−) sides of button ①, turn the ignition switch on. It should be noted that changing the tuning steps also deletes frequencies stored in the tuning memories.

- Pressing Button ② and changing the vehicle's battery set the tuning steps and frequency range settings to their initial setting.

Changing the Tuning Steps

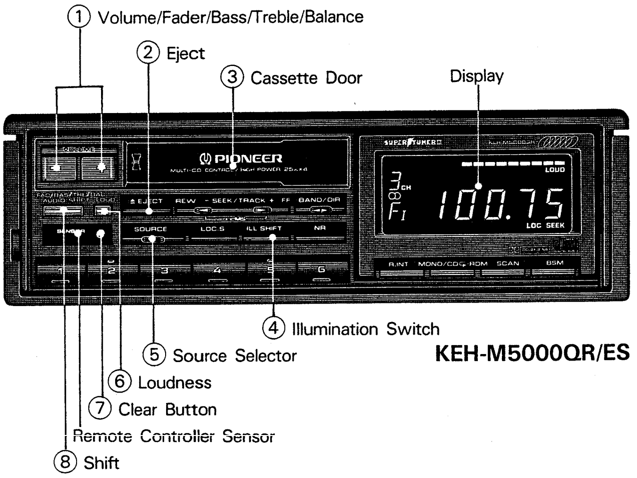
The unit is shipped from the factory preset for 10 kHz steps in AM and 0.2 MHz steps in FM. The following procedure should be used for applications outside of North America, Central America and South America to change the tuning steps and frequency ranges.

	Specification	Initial setting	New setting
AM	Tuning steps	10 kHz steps	9 kHz steps
	Frequency range	530-1,710 kHz	531-1,602 kHz
FM	Tuning steps	0.2 MHz steps	50 kHz steps
	Frequency range	87.9-107.9 MHz	87.5-108 MHz

• CAUTION

This unit will generate a buzzer approx. five seconds after the ignition key of the automobile is set to OFF to notify the driver to take out the car stereo before leaving the car. However, this function operates only when the tuning settings are AM 10 kHz, FM 0.2 MHz. When the tuning settings are switched to AM 9 kHz or FM 50 kHz, it does not function.

3. ADJUSTING VOLUME AND TONE



Using the Clear Button

Once all wiring is complete, press Button ⑦ with a thin, pointed object. Though not a normal occurrence, the microprocessor which controls the operation of this unit can be affected by electrostatic noise. This generally is indicated by such symptoms as no power being supplied when you switch the unit on, failure of buttons and controls, or an abnormal display. Should this happen, press Button ⑦ with a thin, pointed object to reset the microprocessor. Note that doing so also resets all audio controls, so you will have to make any desired settings again. This operation deletes all memory contents, such as frequencies stored in the preset memory, so you will have to make any desired settings again.

Switching Power On

Radio

Press Button ⑤ to switch the tuner power on. Press Button ⑤ again to switch the power off.

Tape

Insert the cassette tape through the Cassette Door ③, and the power will be automatically turned on to get the tape start being played back. To eject the tape, press the button ②.

- You will hear a few consecutive clicks from your unit when you have started the engine with the cassette tape inserted or when you have again mounted your unit on the Quick Release Mounting Bracket following dismounting. The sounds are only the sign of your unit's mechanical preparation being made, but does not indicate at all its functional failure.

Changing the Source

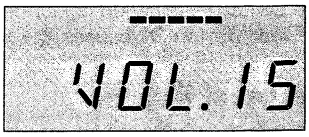
When the cassette tape is inserted, the source changes at each press of the button ⑤: Tape → Radio → OFF. When a Multi-Play CD player—optionally available Multi-Play CD Player CDX-M70, for example—is connected to your unit, the source changes: Multi-Play CD Player → Tape → Radio → OFF.

Adjusting Volume/Fader/Bass/Treble/Balance

To adjust volume, press the button ①. The display changes at each press of the button ⑧: Volume → Fader → Bass → Treble → Balance. Press the button ① to adjust the displayed mode.

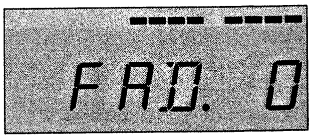
Adjusting Volume

Pressing the (+) side of Button ① increases the volume, while the (−) side decreases it.



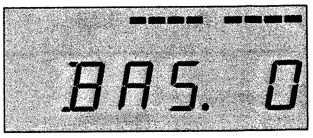
Adjusting the Fader

This function controls the balance between the front and rear speakers of a 4-speaker system. Pressing the (−) side of Button ① shifts the balance to the front speakers, while the (+) side shifts it to the rear speakers.
In the case of a 2-speaker system, set the display to **"FAD.O"**. (In the case of a 4-speaker system the fader adjusts the balance between the front and rear pairs of speakers.) In the case of a 6-speaker system (4 speakers connected to this unit and 2 speakers connected to an external power amplifier connected to Pre-out), the front-rear balance is between the 2 front speakers and the rest.



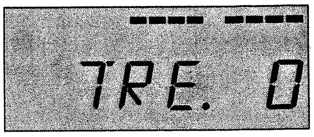
Adjusting Bass

Pressing the (+) side of Button ① increases bass, while the (−) side decreases bass.



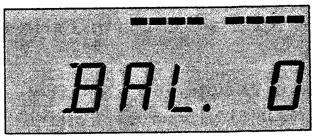
Adjusting Treble

Pressing the (+) side of Button ① increases treble, while the (−) side decreases treble.



Adjusting Balance

Pressing the (−) side of Button ① shifts the balance to the left speaker, while the (+) side shifts it to the right speaker.



- When you're adjusting fader, bass, treble or balance settings, the indicator will stop at the center setting. About 5 seconds after adjustment has been made, the display returns to its previous state.

Using the Loudness Function

Press Button ⑥ and the "**LOUD**" indicator will appear on the display. This "loudness" function enhances both the high and low ranges of sound to give even more power to output even at low volumes.

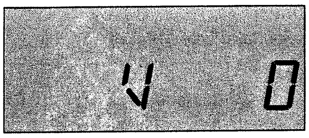
Switching Illumination Colour

Press Button ④ to switch illumination colour between green and amber. Pressing Clear Button ⑦ causes the illumination to be turned green.

Using Source Level Adjustor

You may wish to adjust volume when you have changed the source to radio, tape, or CD or when you have changed the radio band from FM to AM. You can do so on the basis of the volume of FM as follows:

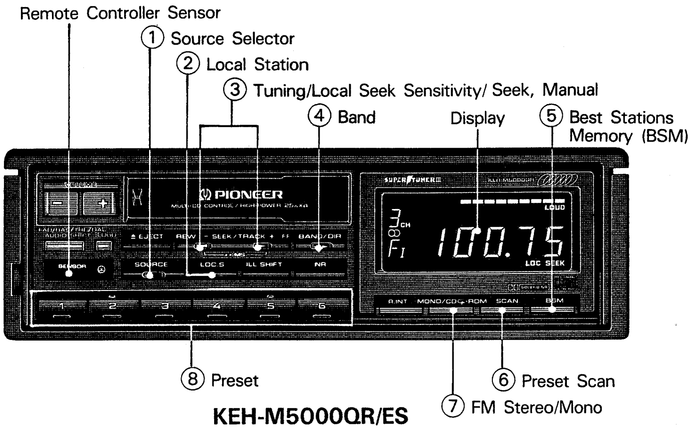
1. Use the button ⑤ to change the source. (In case of radio, change the band to AM.)
2. Hold down the button ⑧ for about 2 seconds, and the display will show you the volume of the source.



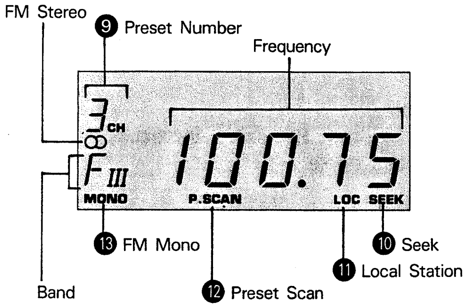
3. To increase the volume, press the (+) side of the button ①, and to decrease press the (−) side. You can adjust the volume within a span of V−4 and V+4. The display automatically returns to the previous showing when five seconds have elapsed after the adjustment.

- No adjustment can be made when an FM station is tuned in.

4. USING THE RADIO


Remote Controller Sensor
① Source Selector
② Local Station
③ Tuning/Local Seek Sensitivity/ Seek, Manual
④ Band
Display
⑤ Best Stations Memory (BSM)
PIONEER
3 CH
FI 100.75
LOUD
LOC SEEK
⑧ Preset
⑥ Preset Scan
⑦ FM Stereo/Mono

KEH-M5000QR/ES


FM Stereo
❾ Preset Number
Frequency
3 CH
FIII 100.75
MONO
P.SCAN
LOC SEEK
⓭ FM Mono
❿ Seek
⓫ Local Station
Band
⓬ Preset Scan

1 Press Button ① to switch the radio power on.

2 Press Button ④ to select a band.

FI → FII → FIII → A
(FM1) (FM2) (FM3) (AM)

- If the AM tuning band is changed to 9 kHz, the " M " display band will show.

3 Use seek tuning to tune in a frequency.

Confirm that the SEEK indicator ❿ is shown on the display (if not, press the (+) and (−) sides of Button ③ at the same time). Press the (+) side of Button ③ to automatically tune in the next higher receivable frequency, and the (−) side for a lower frequency.

4 Adjust volume and tone (see page 3).

5 Assign the tuned frequency to one of the buttons in Bank ⑧ (preset memory).

Press and hold down one of the buttons in Bank ⑧ for at least two seconds. The frequency is assigned to the selected button when the preset number ❾ stops flashing on the display. Up to 18 FM stations (6 each for FM1, FM2 and FM3), and six AM stations can be assigned to the preset memory buttons in Bank ⑧.

6 Once a frequency is assigned to a button in Bank ⑧, you just need to press that button to tune it in.

This also causes the number of the button pressed to appear at Position ❾ on the display.

Preset Scan Tuning

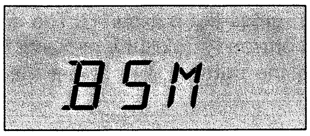
This function lets you automatically monitor the stations assigned to the preset buttons.

1. Press the button ⑥, and "**P.SCAN**" ⓬ will light up and the preset number ❾ flash.
   Each station assigned to the buttons in Bank ⑧ will be automatically tuned in for about eight seconds.
2. When you hear a station that you like, press Button ⑥ again to cancel preset scan tuning and remain at that station.

BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank ⑧, from strongest to weakest. It comes in handy when trying to find local stations while driving.

1. Press Button ④ and select a band.
2. Hold down Button ⑤. After about two seconds, a "beep" will sound to signal that the BSM search has started. At this time, "**BSM**" will flash on the display.



3. The frequency display will return once BSM search is complete, and frequencies are assigned to buttons 1 through 6 in Bank ⑧.

- At the end of the BSM search, the displayed frequency is that assigned to Button 1 of Bank ⑧.
- If there are fewer than six strong stations in the area, some of the buttons in Bank ⑧ will not be assigned frequencies, so they will retain any frequencies assigned to them previously.
- BSM search may take as long as 30 seconds in areas where there are few strong stations.
- You can cancel BSM search by pressing Button ④.

Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.

1. Press both (+) and (−) sides of Button ③ at the same time to clear **"SEEK"** ❿.
2. Each press of the (+) side of button ③ increases the frequency in 50 kHz steps in the FM band, 10 kHz in the AM band. Pressing the (−) side of button ③ decreases the frequency. Holding down either side of button ③ changes the frequency at high speed.

- AM frequencies are tuned in 9 kHz steps after the tuning steps are changed.

Switching between FM Stereo and Mono

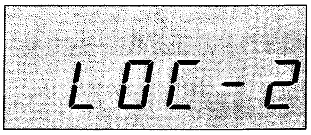
Generally, it is best to allow the "Super Tuner Ⅲ" function to automatically set the optimum listening conditions. When there is a large amount of noise, you can press button ⑦ for clearer, mono reception (**"MONO"** ⓭ will appear on the display).

Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has four seek tuning sensitivity levels for FM and two levels for AM to match local conditions.

Changing the Local Seek Sensitivity

1. Use Button ④ to select a band.
2. Hold down the button ② for more than two seconds, and the display will show you the current local seek sensitivity for about five seconds.



(Example: LOC-2)

3. While the local seek sensitivity remains on the display, press the (+) side of Button ③ to increase the sensitivity level, and the (−) side to decrease the level as shown below.

FM : LOC-1⇄LOC-2⇄LOC-3⇄LOC-4
AM: LOC-1⇄LOC-2

The LOC-4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.

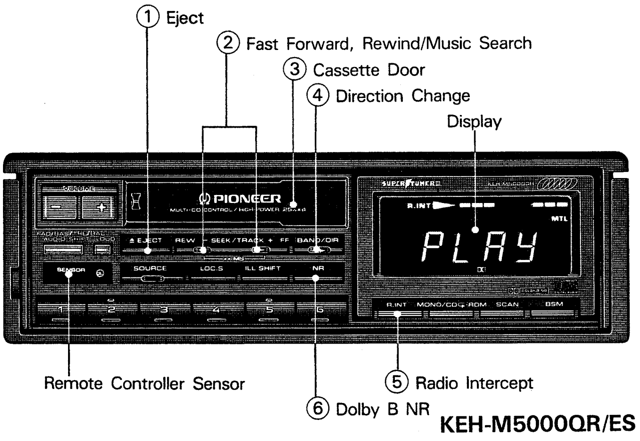
- The display of local seek sensitivity returns to the frequency when about five seconds have elapsed after the change of sensitivity.

Switching between Local and DX

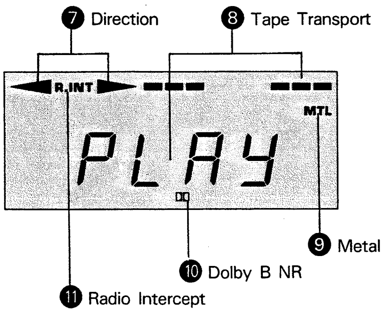
Press Button ② to switch between Local and DX (distant) seek tuning.

When **"LOC"** ⓫ is shown on the display, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

5. USING THE TAPE DECK



KEH-M5000QR/ES



1 **Insert the cassette tape into the slot ③, and power will be turned on and the tape begin being played back.**

At this time, the tape running indicator ❽ and the tape running direction indicator ❼ will light up.

2 **Adjust volume and tone (see page 3).**

3 **To eject the cassette tape, press the button ①.**

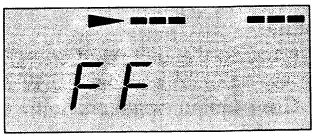
- Power is automatically turned off when the cassette tape has not been set within a few seconds. When this happens, remove the tape by pressing the button ① because of a possible trouble with the tape.
- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.

Changing Program

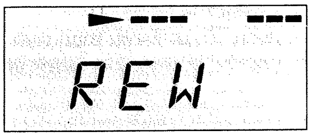
Press the button ④ to change the side of tape from A to B or vice versa.

Using Fast Forward and Rewind

1. To forward tape fast, press the (+) side of the button ②.



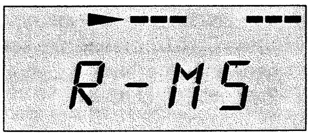
To rewind tape, press the (−) side.



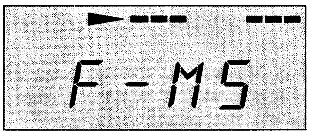
2. To release the Fast Forward or Rewind function, press the button ④.

Using Music Search

1. To repeat the current selection (A), press the (−) side of the button ② two consecutive times.



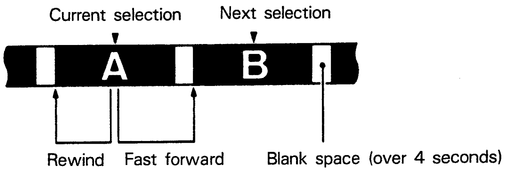
To hear the follwing piece of music (B) rather than continue the current selection, press the (+) side of the button ② two consecutive times. Pressing the button ② three consecutive times makes the normal sequence of playing resume.



2. To release the Music Search function, press the button ④.

The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.

- Unrecorded "blank" portions between selections is less than 4 seconds → the blank portion cannot be detected by the unit.
- Pauses in recorded conversations are longer than 4 seconds → the unit reads these as blanks between selections.
- Portions are recorded at very low volume for more than 4 seconds → the unit reads these as blanks between selections.



Dolby B NR

To hear a tape recorded using a Dolby NR system, press the button ⑥. ("DD" ❿ appears).

Auto Tape Selector

When a cassette tape is inserted, the automatic tape selector determines the tape type, and switches between 70 µs and 120 µs equalization. When it is a metal or chrome tape, **"MTL"** ❾ comes on. When it is a normal tape, nothing comes on.

Using Radio Intercept

Use Radio Intercept to hear radio while Fast Forward or Rewinding.

1. Press the button ⑤ (**"R.INT"** ⓫ appears) before Fast Forward or Rewinding, and you will hear radio.
2. To release the Radio Intercept function, press the button ⑤ again.

- The Radio Intercept does not function when the Music Search is in operation.

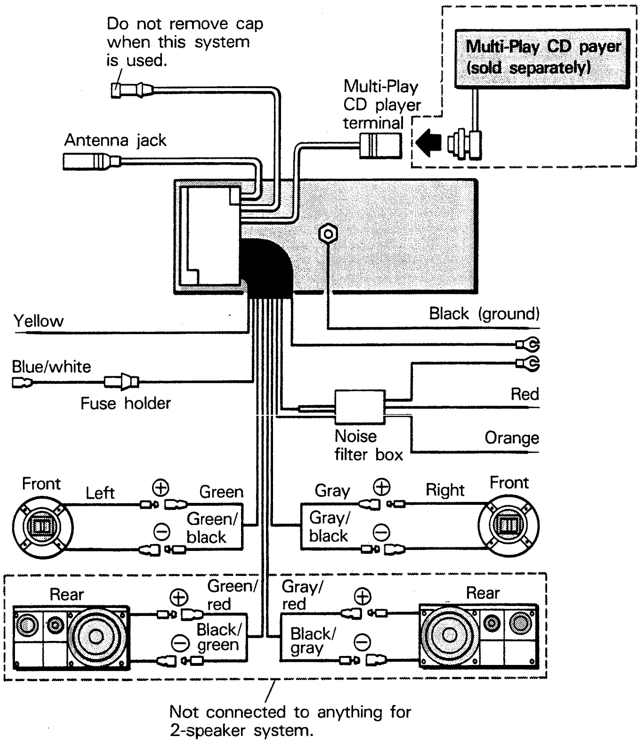
6. CONNECTIONS

Note:

- To avoid shorts in the electrical system, be sure to disconnect the battery ⊖ cable before beginning installation.
- Be sure to properly connect the color coded leads. Failure to do so can cause malfunctions.
- Be sure to connect the grounding lead to a metal part, such as the chassis of the car. If the lead is not connected properly, this unit will not operate at all.
- Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker ⊖ leads are common.
- Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.
- Speakers connected to this unit must be high-power type possessing maximum input of at least 25 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.
- When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.
- Be sure that the antenna cord and speaker cord are apart as far as possible from each other in order to prevent noise interruption. When this unit is connected to an optionally available Multi-Play CD player, such as CDX-M70, the connecting cord must also be as distant as possible from the antenna cord for the same purpose.

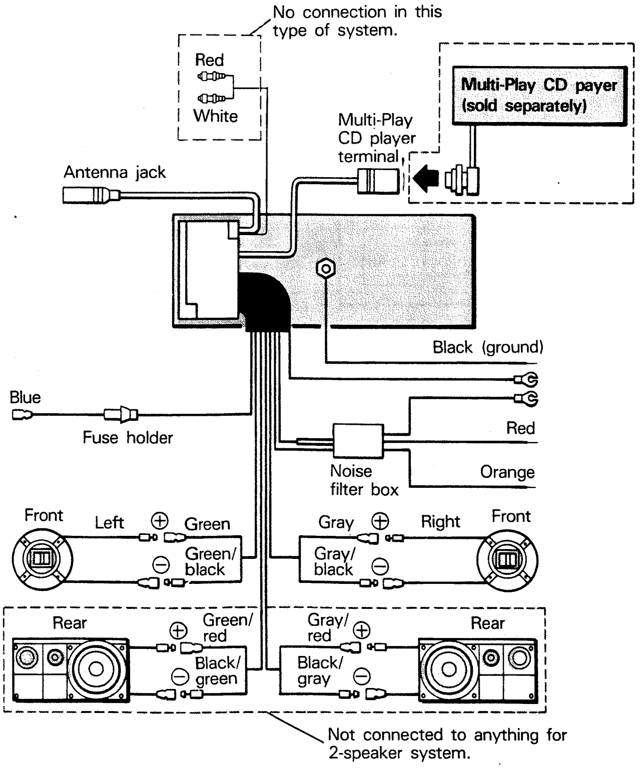
• KEH-M5000SDK/WG, KEH-M5000B/EW

2/4-speaker system


Do not remove cap when this system is used.
Multi-Play CD payer (sold separately)
Multi-Play CD player terminal
Antenna jack
Yellow
Black (ground)
Blue/white
Fuse holder
Red
Noise filter box
Orange
Front
Left
⊕
Green
Green/ black
⊖
Gray
Right
Front
Gray/ black
Rear
Green/ red
Black/ green
Gray/ red
Black/ gray
Rear
Not connected to anything for 2-speaker system.

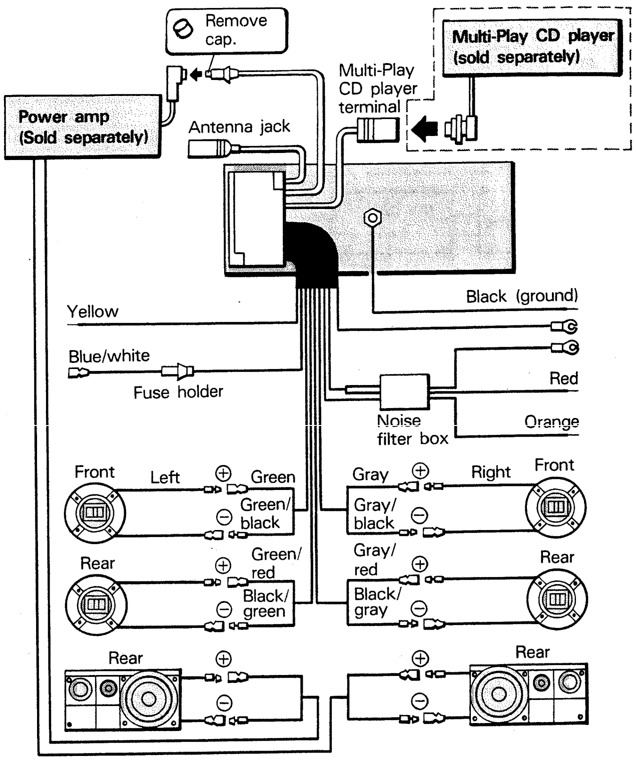
• KEH-M5000QR/ES

2/4-speaker system


No connection in this type of system.
Red
White
Multi-Play CD payer (sold separately)
Multi-Play CD player terminal
Antenna jack
Black (ground)
Blue
Fuse holder
Red
Noise filter box
Orange
Front
Left
⊕
Green
Green/ black
⊖
Gray
Right
Front
Gray/ black
Rear
Green/ red
Black/ green
Gray/ red
Black/ gray
Rear
Not connected to anything for 2-speaker system.

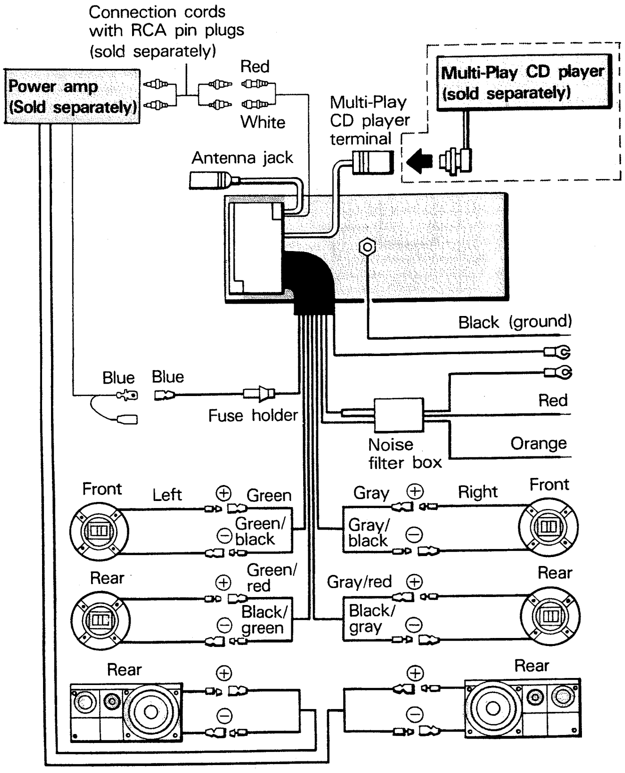
• KEH-M5000SDK/WG, KEH-M5000B/EW

6-speaker system


Remove cap.
Multi-Play CD player (sold separately)
Multi-Play CD player terminal
Power amp (Sold separately)
Antenna jack
Black (ground)
Yellow
Blue/white
Fuse holder
Red
Noise filter box
Orange
Front
Left
⊕
Green
Green/ black
⊖
Gray
Right
Front
Gray/ black
Rear
Green/ red
Black/ green
Gray/ red
Black/ gray
Rear
Rear
Rear

• KEH-M5000QR/ES

6-speaker system


Connection cords with RCA pin plugs (sold separately)
Red
White
Power amp (Sold separately)
Multi-Play CD player (sold separately)
Multi-Play CD player terminal
Antenna jack
Black (ground)
Blue
Blue
Fuse holder
Red
Noise filter box
Orange
Front
Left
⊕
Green
Green/ black
⊖
Gray
Right
Front
Gray/ black
Rear
Green/ red
Black/ green
Gray/red
Black/ gray
Rear
Rear
Rear

7. ADJUSTMENT

- **Connection Diagram**

NOTICE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.

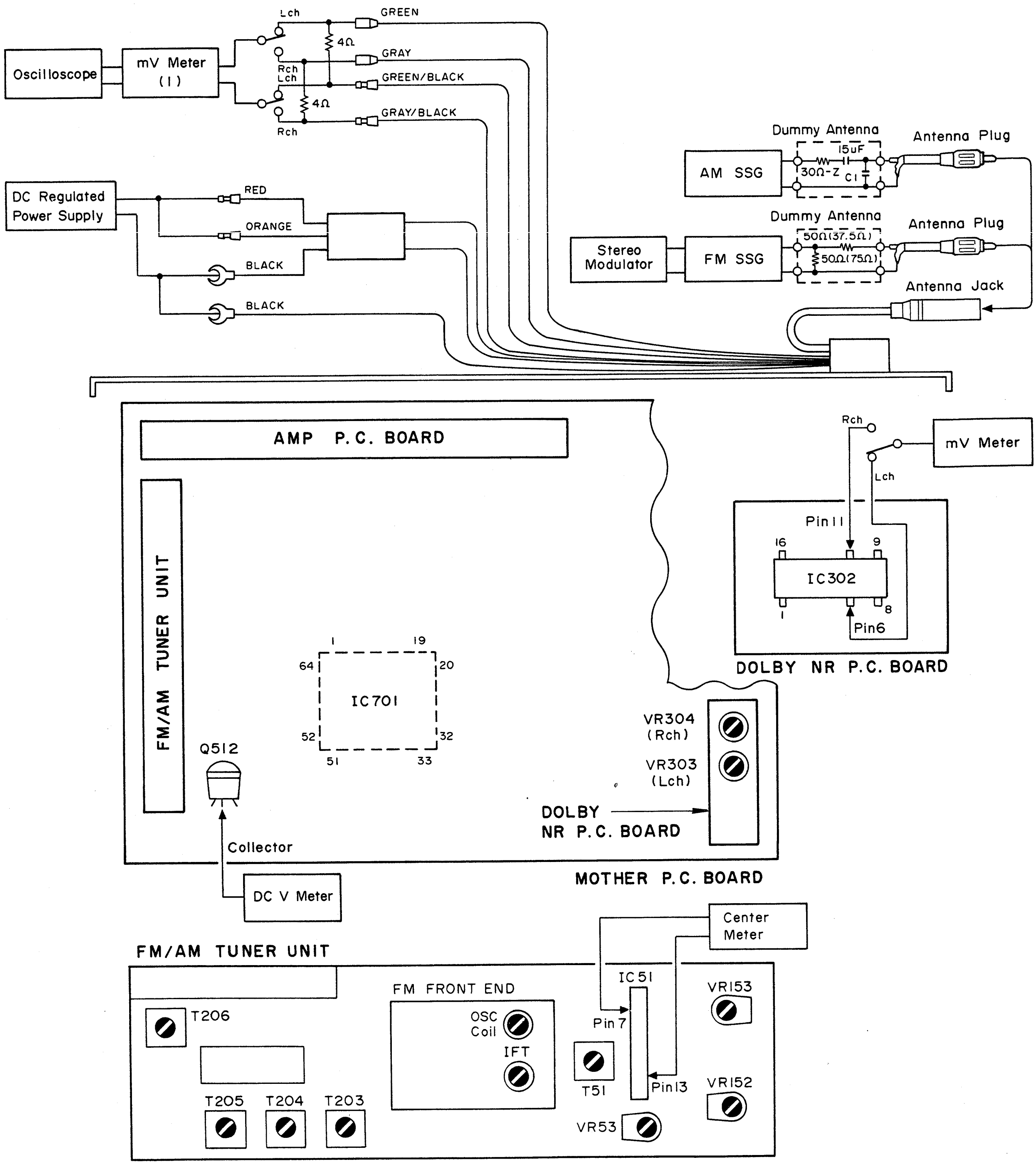

Oscilloscope
mV Meter (1)
Lch
Rch
Lch
Rch
4Ω
4Ω
GREEN
GRAY
GREEN/BLACK
GRAY/BLACK
DC Regulated Power Supply
RED
ORANGE
BLACK
BLACK
Dummy Antenna
15uF
30Ω-Z
C1
AM SSG
Antenna Plug
Dummy Antenna
50Ω(37.5Ω)
50Ω(75Ω)
Stereo Modulator
FM SSG
Antenna Plug
Antenna Jack
AMP P.C. BOARD
FM/AM TUNER UNIT
IC701
1
19
64
20
52
32
51
33
Q512
Collector
DC V Meter
Rch
Lch
mV Meter
Pin11
16
9
IC302
1
8
Pin6
DOLBY NR P.C. BOARD
VR304 (Rch)
VR303 (Lch)
DOLBY NR P.C. BOARD
MOTHER P.C. BOARD
Center Meter
FM/AM TUNER UNIT
FM FRONT END
OSC Coil
IFT
T206
T205
T204
T203
IC51
Pin7
Pin13
T51
VR53
VR153
VR152

Fig. 1

DOLBY NR LEVEL ADJUSTMENT

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR303 (Lch), VR304 (Rch)	mV Meter: -7.2dBs±1dB (Dolby NR Switch: OFF, METAL Switch: OFF)

MW/LW ADJUSTMENT (KEH-M5000SDK/WG, KEH-M5000B/EW)

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tuning Volt	1	(MW Mode)		1,602	T203	DC V Meter: Less than 7.0V
	2	(LW Mode)		153		Verify that DC V Meter is more than 2.0V
IF	1	999	20−25	999	T204, T205, T206	mV Meter (1): Maximum

AM ADJUSTMENT (KEH-M5000QR/ES) *(When 9kHz tuning steps)

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tuning Volt	1			1,710 *(1,602)	T203	DC V Meter: Less than 7.0V
	2			530 *(531)		Verify that DC V Meter is more than 2.0V
IF	1	1,000 *(999)	20−25	1,000 *(999)	T204, T205, T206	mV Meter (1): Maximum

FM ADJUSTMENT ※Stereo MOD.: 1kHz, L+R=90%, Pilot=10% *: ES model when tuning step at 200kHz.

	No.	FM SSG (400Hz, 100%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (MHz)	Level (dBμV)			
Tuning Volt	1			108.0 *(107.9)	OSC Coil (FM Front End)	DC V Meter: 7.0V
IF	1	98.1 Unmodulated	60	98.1	T51	Center Meter: 0
	2	98.1	5	98.1	IFT (FM Front End)	mV Meter (1): Maximum
Mute	1	98.1	60	98.1		mV Meter (1): A dB (This output is A)
	2	98.1	10	98.1	VR53	mV Meter (1): A-3dB
ARC	1	98.1※	60	98.1	VR153	mV Meter (1): Separation Maximum (Stereo Position)
	2	98.1※	35	98.1	VR152	mV Meter (1): Separation 5dB (Stereo Position)

8. DISASSEMBLY

• Removing the Handle Assy

1. Remove the four screws.
2. Press the tabs at four locations indicated by arrows, and then pull out the handle assy.

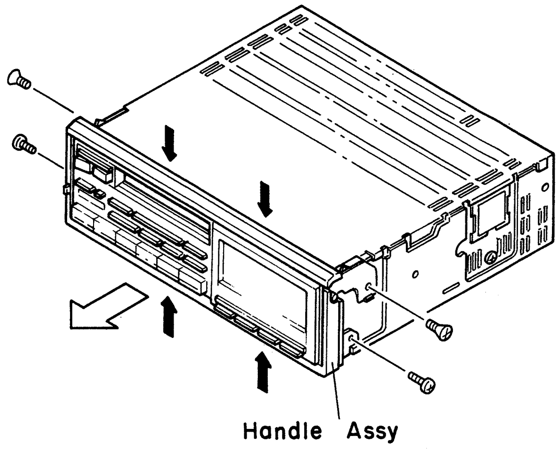

Handle Assy

Fig. 2

• Removing the Case

1. Insert and turn a flat screwdriver to remove the case.
2. Raise the case to remove.

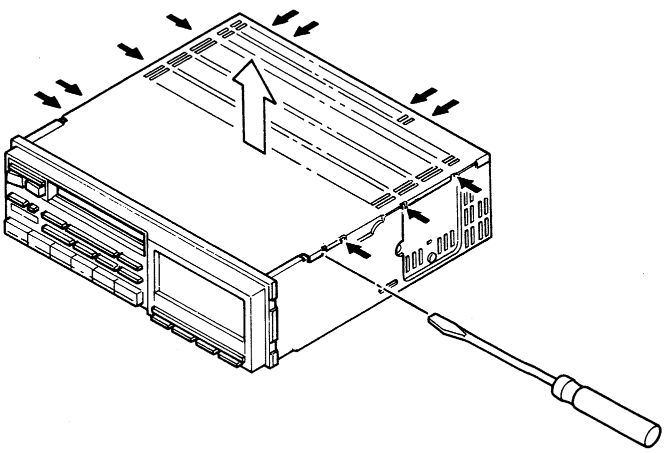


Fig. 3

• Removing the Cassette Mechanism Assy

1. Remove the four screws.
2. Disconnect the mechanism control unit connector.
3. Remove the cassett mechanism assy.

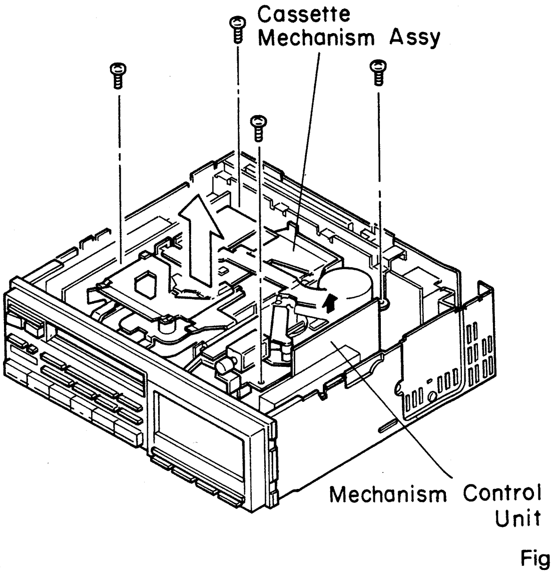

Cassette Mechanism Assy
Mechanism Control Unit

Fig. 4

• Removing the Grille Assy

1. Disconnect the two connectors.
2. Press the tabs at three locations indicated by arrows, and then pull out the grille assy.

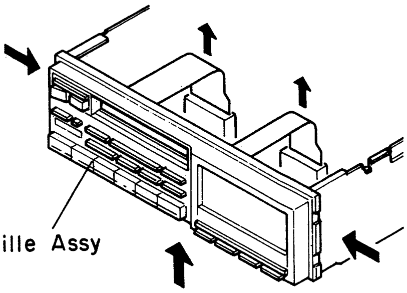

Grille Assy

Fig. 5

• Removing the Tuner Amp Unit

1. Remove the five screws, and remvoe the cord assy.
2. Unbend the tabs at three locations indicated by arows until straight.
3. Remove the solder indicated by arrow A.
4. Disconnect the connector.
5. Raise up on tuner amp unit to remove it from chassis unit.

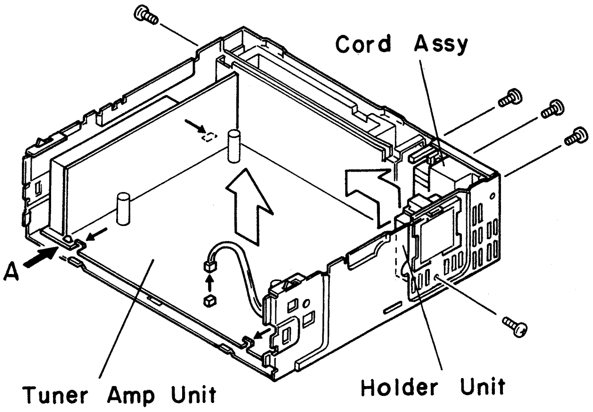

Cord Assy
A
Tuner Amp Unit
Holder Unit

Fig. 6

• Removing the Dolby NR P.C. Board, Amp P.C. Board and FM/AM Tuner Unit

1. Remove the solder and unbend the tabs on back of each unit circuit board until straight.
2. Pull out unit as shown in illustration.

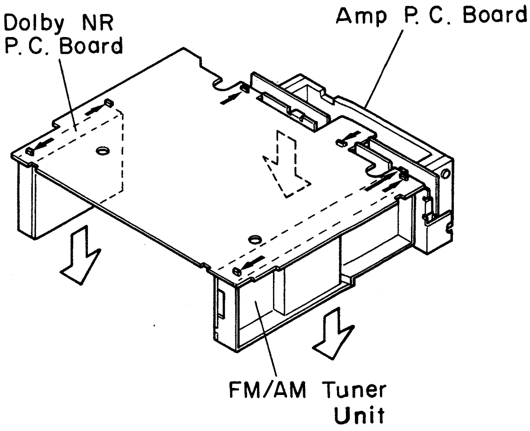

Dolby NR
P. C. Board
Amp P. C. Board
FM/AM Tuner
Unit

Fig. 7

• Removing the Display Unit

1. Remove the four screws.
2. Press the tabs at four locations indicated by arrows, and then pull out the display unit.

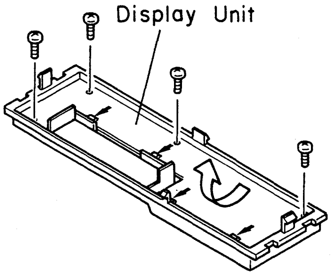

Display Unit

Fig. 8

9. REMOTE CONTROL ASSY (KEH-M5000QR/ES)

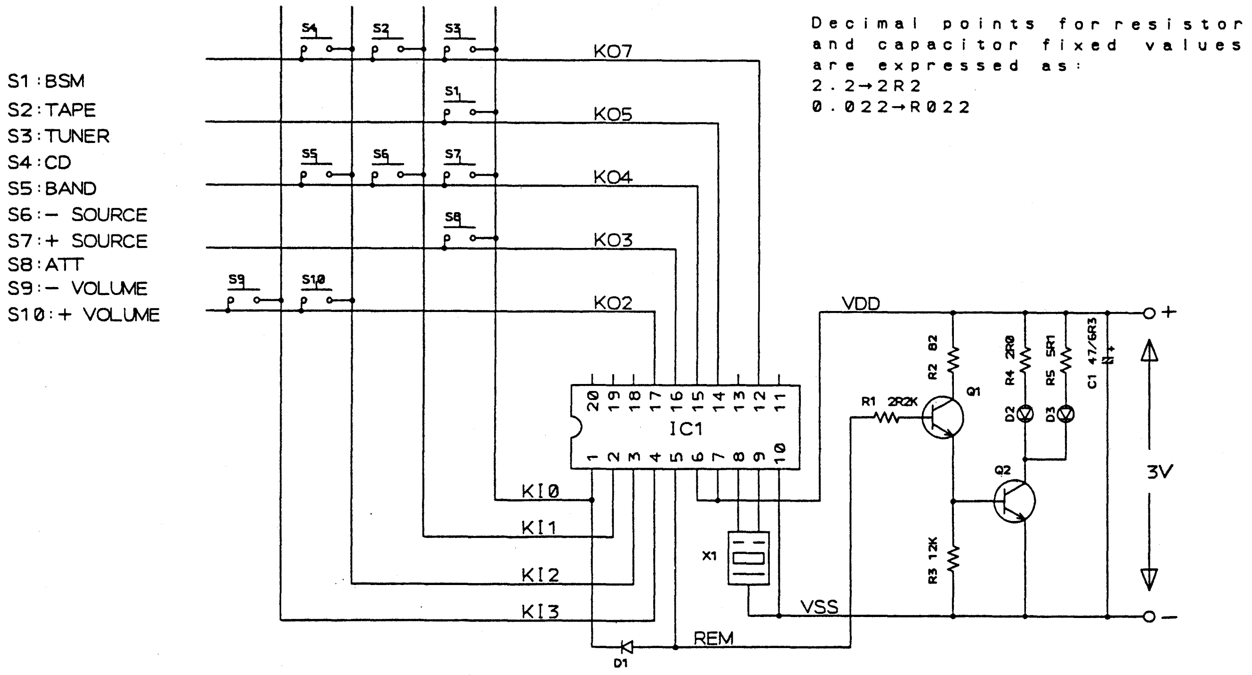
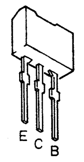

S1 : BSM
S2 : TAPE
S3 : TUNER
S4 : CD
S5 : BAND
S6 : − SOURCE
S7 : + SOURCE
S8 : ATT
S9 : − VOLUME
S10 : + VOLUME
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022
KO7
KO5
KO4
KO3
KO2
KI0
KI1
KI2
KI3
IC1
X1
D1
REM
VSS
VDD
R1 2R2K
Q1
Q2
R2 82
R3 12K
R4 2R0
R5 5R1
C1 47/6R3
D2
D3
3V
+
−

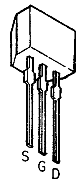
Fig. 9

- **ICs and Transistors**

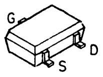
2SB1243
2SD1859



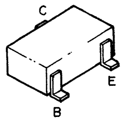
2SK330



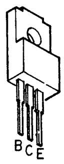
2SJ106



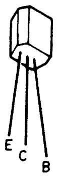
2SC2712
2SC3295
2SC4116



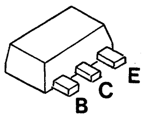
2SB945



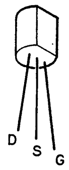
2SA1048
2SC2458
2SC3113



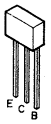
2SB1441JU



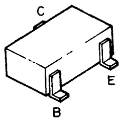
2SK435



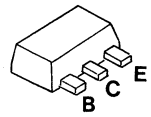
DTA144ES



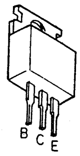
DTC124EK
DTC143ZU



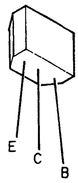
DTBL13ZP



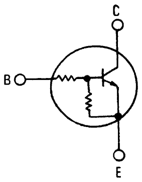
DTB123ES



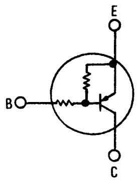
DTA114ES
DTA143ES
DTC143ES
DTC144ES
DTC343TS
DTC363TS



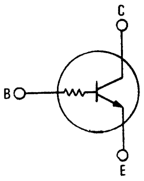
DTC143ES
DTC144ES



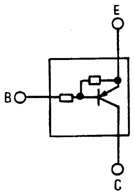
DTA114ES
DTA143ES
DTA144ES
DTB123ES



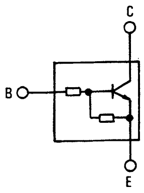
DTC343TS
DTC363TS



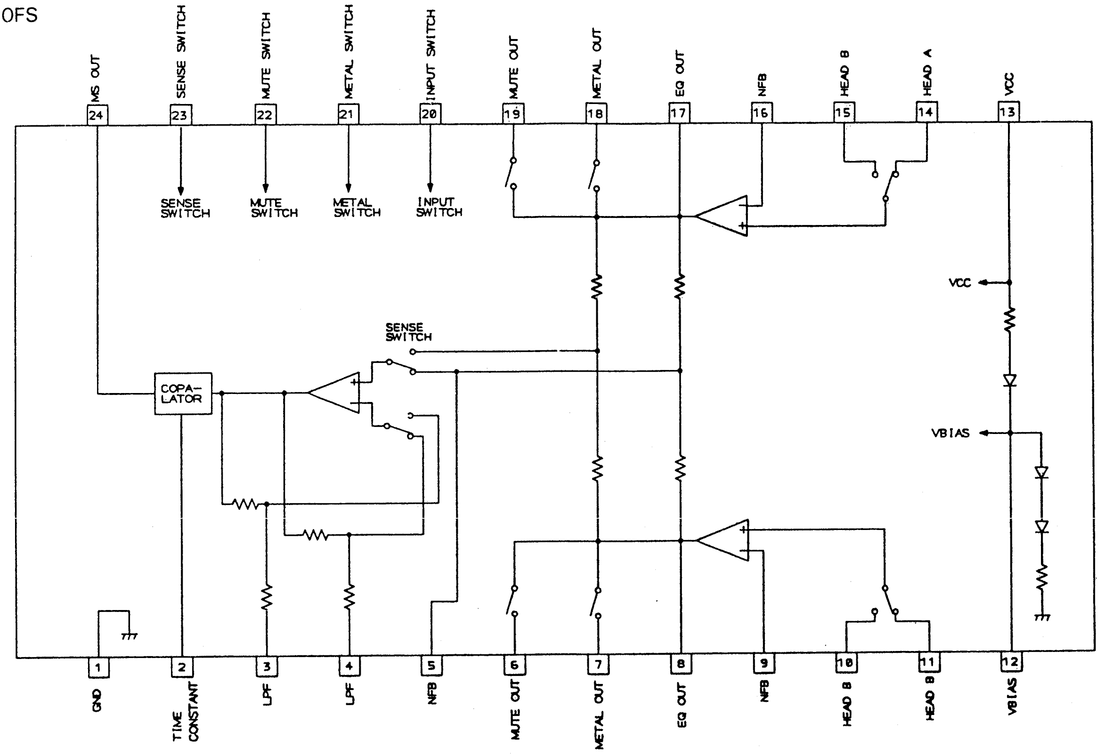
DTBL13ZP



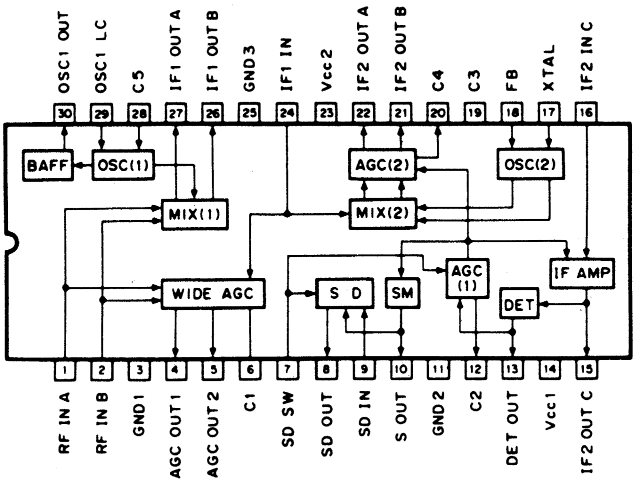
DTC124EK
DTC143ZU



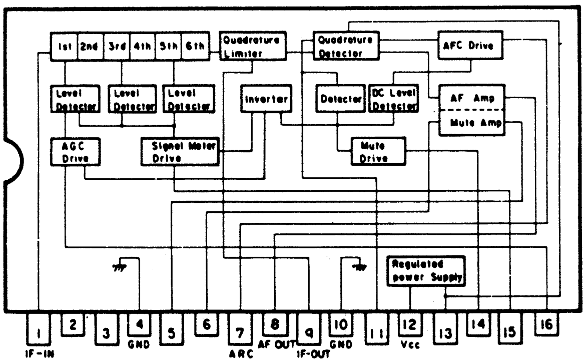
IC1 : BA3430FS


MS OUT
SENSE SWITCH
MUTE SWITCH
METAL SWITCH
INPUT SWITCH
MUTE OUT
METAL OUT
EQ OUT
NFB
HEAD B
HEAD A
VCC
24
23
22
21
20
19
18
17
16
15
14
13
SENSE SWITCH
MUTE SWITCH
METAL SWITCH
INPUT SWITCH
VCC
SENSE SWITCH
COPA-LATOR
VBIAS
1
2
3
4
5
6
7
8
9
10
11
12
GND
TIME CONSTANT
LPF
LPF
NFB
MUTE OUT
METAL OUT
EQ OUT
NFB
HEAD B
HEAD B
VBIAS

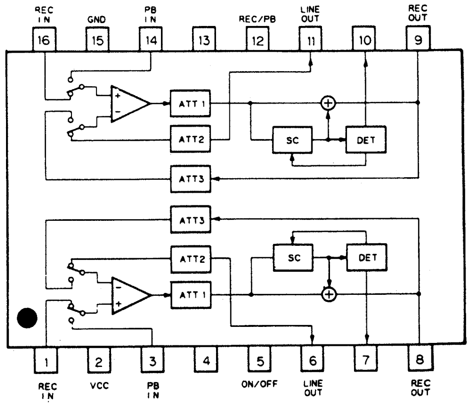
IC201 : PA4010


OSC1 OUT
OSC1 LC
C5
IF1 OUT A
IF1 OUT B
GND3
IF1 IN
Vcc2
IF2 OUT A
IF2 OUT B
C4
C3
FB
XTAL
IF2 IN C
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
BAFF
OSC(1)
AGC(2)
OSC(2)
MIX(1)
MIX(2)
WIDE AGC
S D
SM
AGC (1)
IF AMP
DET
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
RF IN A
RF IN B
GND1
AGC OUT1
AGC OUT 2
C1
SD SW
SD OUT
SD IN
S OUT
GND 2
C2
DET OUT
Vcc1
IF2 OUT C

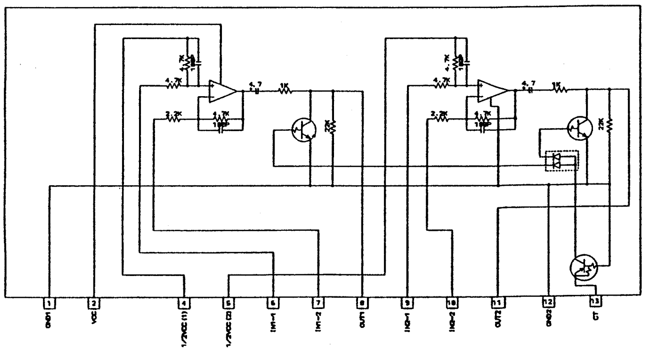
IC51 : LA1140B


1st
2nd
3rd
4th
5th
6th
Quadrature Limiter
Quadrature Detector
AFC Drive
Level Detector
Level Detector
Level Detector
Inverter
Detector
DC Level Detector
AF Amp
Mute Amp
AGC Drive
Signal Meter Drive
Mute Drive
Regulated power Supply
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
IF-IN
GND
ARC
AF OUT
IF-OUT
GND
Vcc

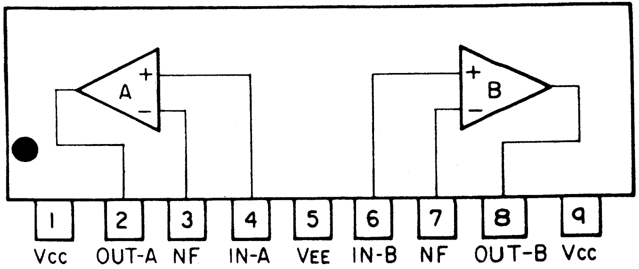
IC302 : HA12134


REC IN
GND
PB IN
REC/PB
LINE OUT
REC OUT
16
15
14
13
12
11
10
9
ATT 1
ATT2
ATT3
SC
DET
ATT3
ATT2
ATT 1
SC
DET
1
2
3
4
5
6
7
8
REC IN
VCC
PB IN
ON/OFF
LINE OUT
REC OUT

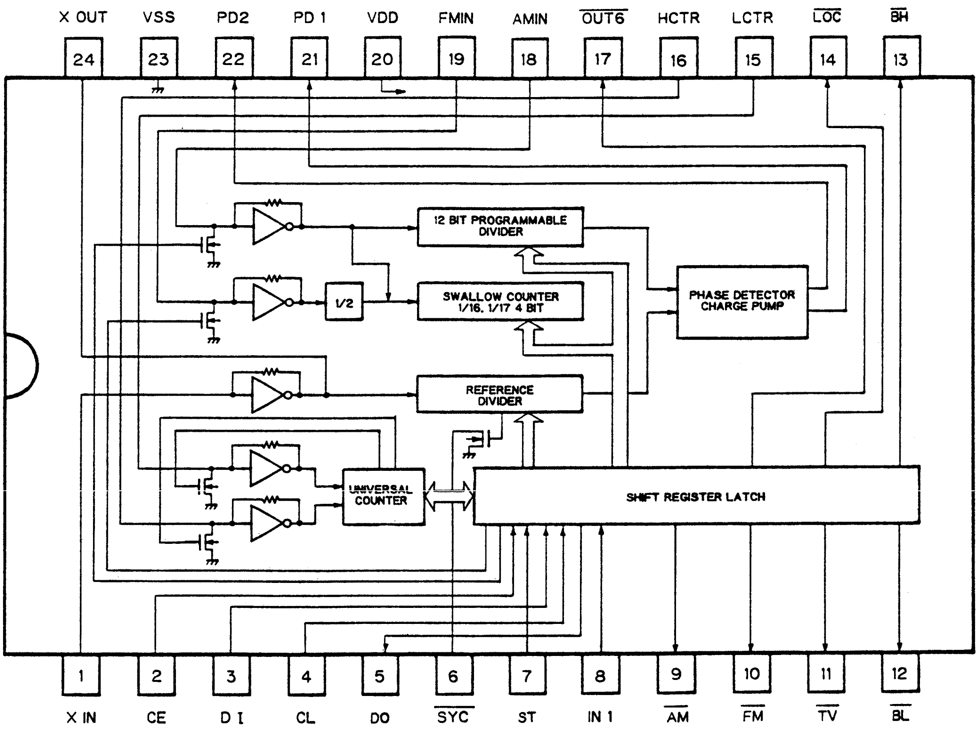
IC851 : KHA158 . . . . . . KEH-M5000QR/ES


4.7K
4.7K
4.7
1K
2.2K
4.7K
22K
4.7K
4.7K
4.7
1K
2.2K
4.7K
22K
1
2
4
5
6
7
8
9
10
11
12
13
GND1
VCC
1/2VCC(1)
1/2VCC(2)
IN1-1
IN1-2
OUT1
IN2-1
IN2-2
OUT2
GND2
Ct

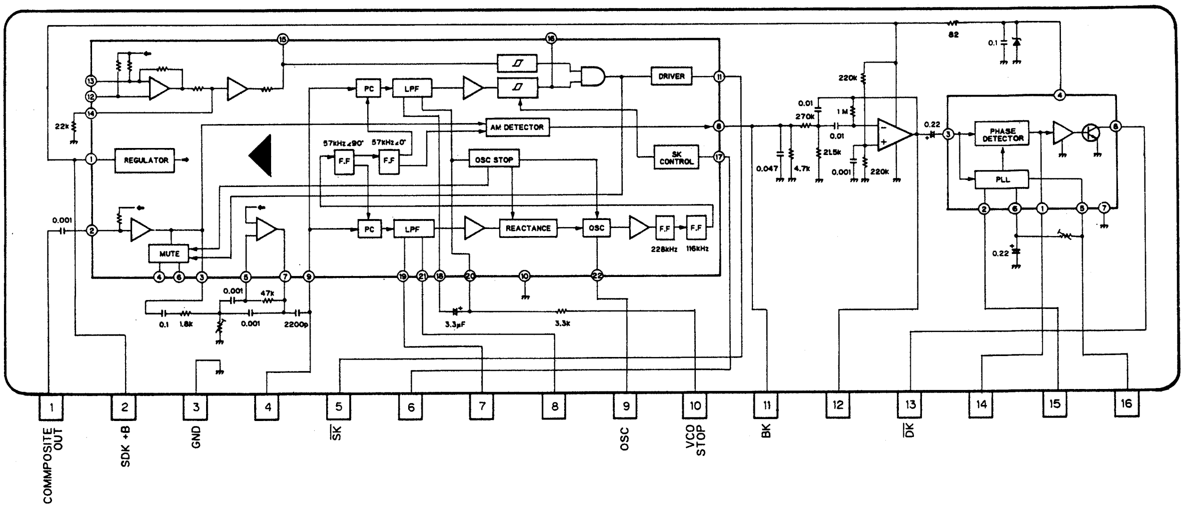
IC852 : μPC4570HA


A
+
–
B
+
–
1
2
3
4
5
6
7
8
9
Vcc
OUT-A
NF
IN-A
VEE
IN-B
NF
OUT-B
Vcc

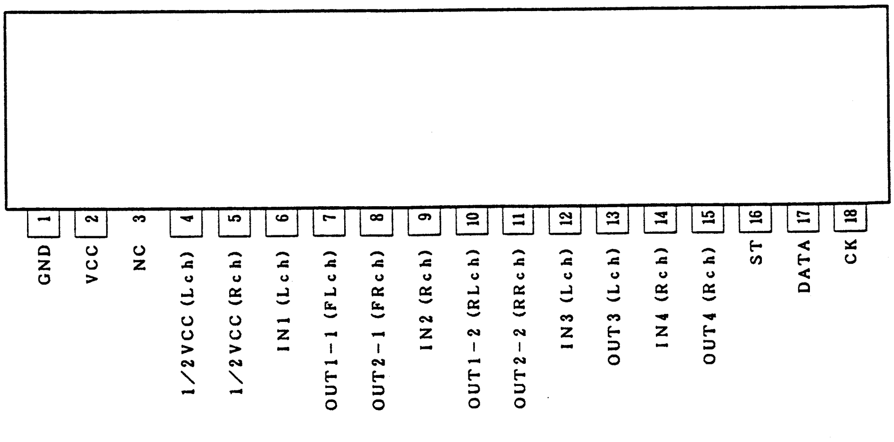
IC501 : LC7218


X OUT
VSS
PD2
PD 1
VDD
FMIN
AMIN
OUT6
HCTR
LCTR
LOC
BH
24
23
22
21
20
19
18
17
16
15
14
13
12 BIT PROGRAMMABLE DIVIDER
SWALLOW COUNTER 1/16, 1/17 4 BIT
1/2
PHASE DETECTOR CHARGE PUMP
REFERENCE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
1
2
3
4
5
6
7
8
9
10
11
12
X IN
CE
D I
CL
DO
SYC
ST
IN 1
AM
FM
TV
BL

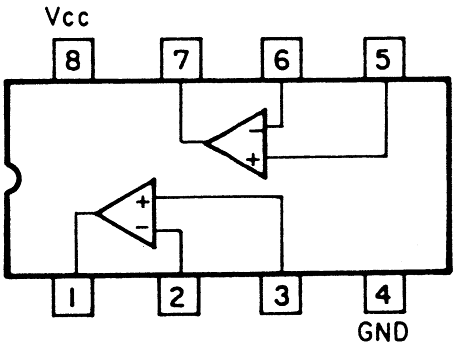
IC802 : KHA142


REGULATOR
MUTE
PC
LPF
AM DETECTOR
57kHz∠90°
57kHz∠0°
F.F
OSC STOP
REACTANCE
OSC
228kHz
116kHz
DRIVER
SK CONTROL
22k
0.001
0.1
1.8k
0.001
47k
0.001
2200p
3.3μF
3.3k
82
0.1
220k
0.01
270k
1M
0.01
21.5k
0.047
4.7k
0.001
220k
0.22
PHASE DETECTOR
PLL
0.22
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
COMMPOSITE OUT
SDK +B
GND
SK
OSC
VCO STOP
BK
DK

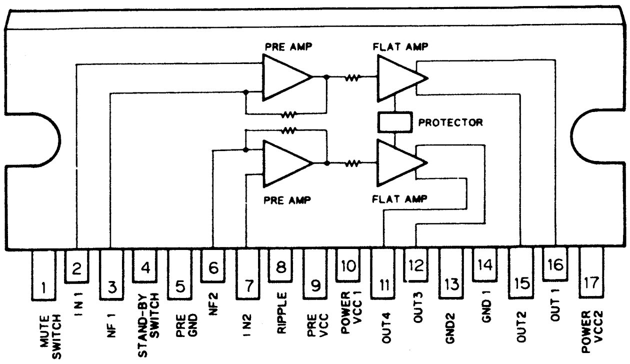
IC601 : KHA255B


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
GND
VCC
NC
1/2VCC (Lch)
1/2VCC (Rch)
IN1 (Lch)
OUT1-1 (FLch)
OUT2-1 (FRch)
IN2 (Rch)
OUT1-2 (RLch)
OUT2-2 (RRch)
IN3 (Lch)
OUT3 (Lch)
IN4 (Rch)
OUT4 (Rch)
ST
DATA
CK

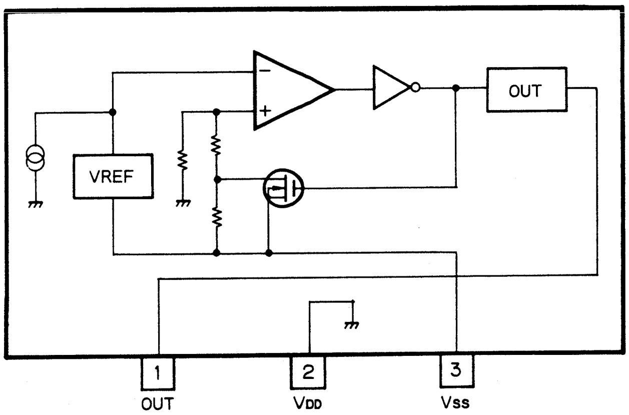
IC602 : µPC4570C


Vcc
8
7
6
5
1
2
3
4
GND

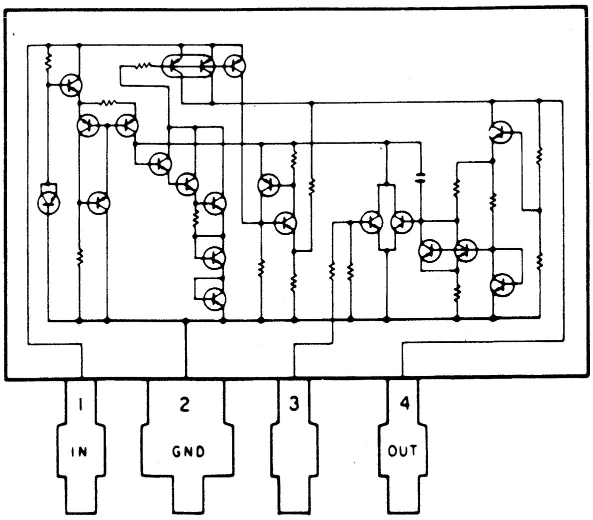
IC551, 552 : TA8215L


PRE AMP
FLAT AMP
PROTECTOR
PRE AMP
FLAT AMP
1 MUTE SWITCH
2 IN1
3 NF1
4 STAND-BY SWITCH
5 PRE GND
6 NF2
7 IN2
8 RIPPLE
9 PRE VCC
10 POWER VCC1
11 OUT4
12 OUT3
13 GND2
14 GND1
15 OUT2
16 OUT1
17 POWER VCC2

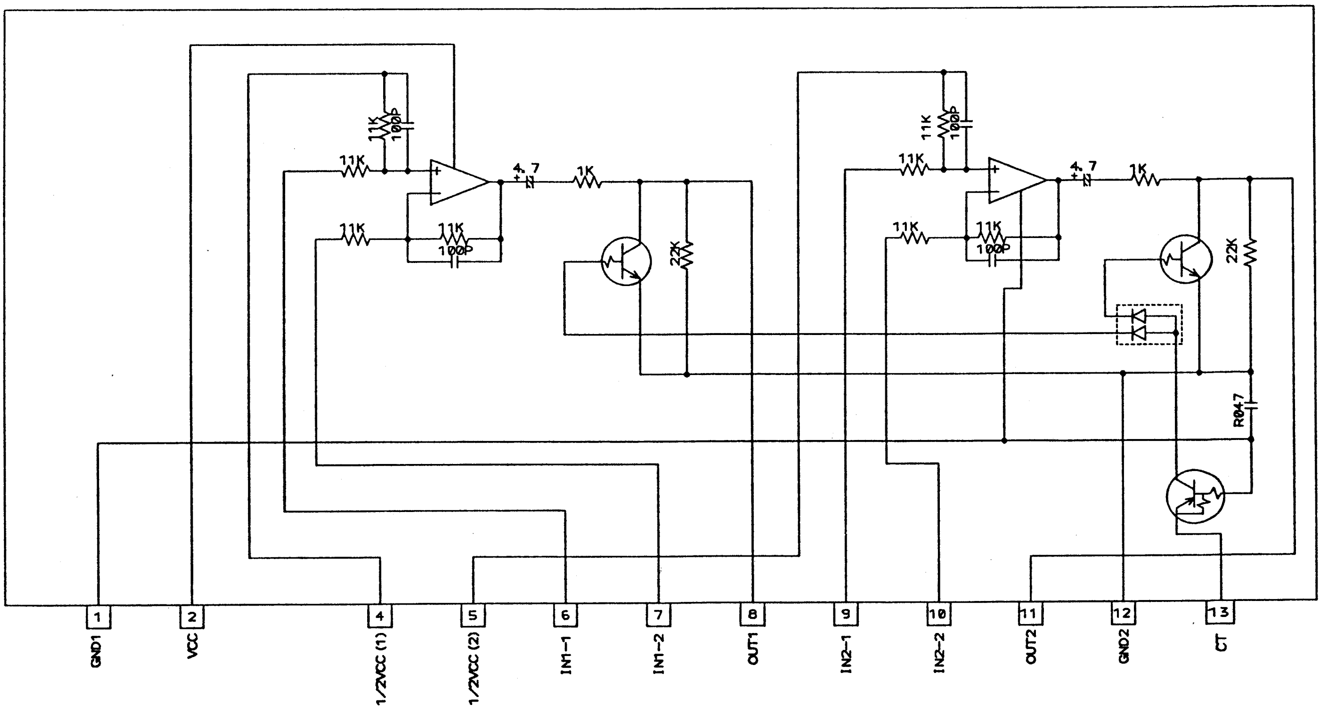
IC702 : S-8053ANO


OUT
VREF
1 OUT
2 VDD
3 Vss

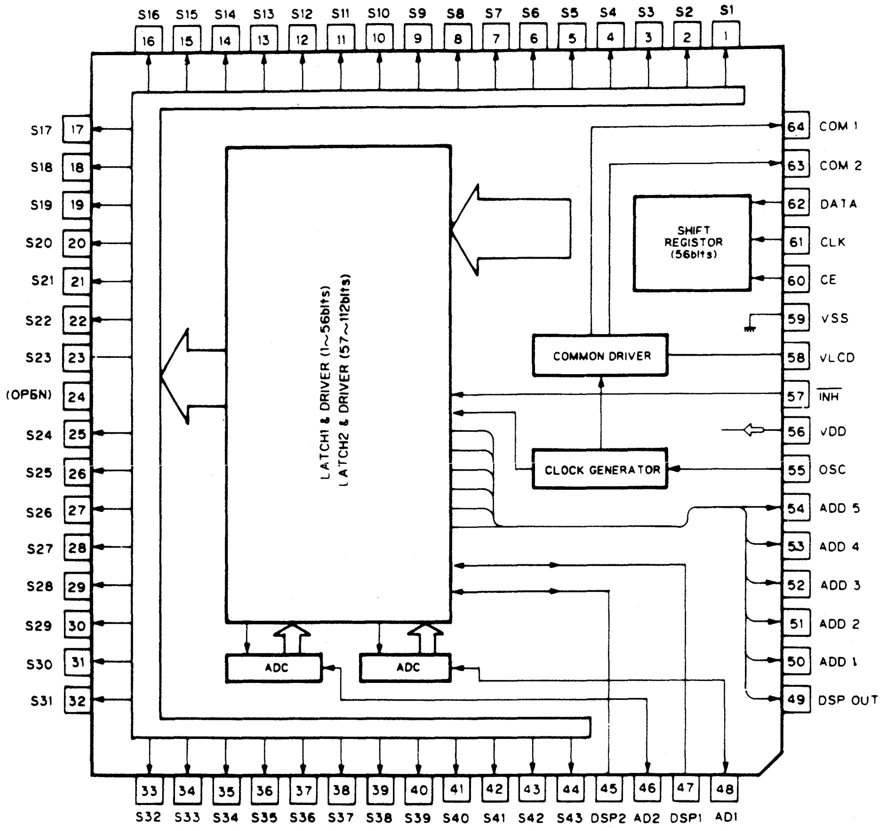
IC703 : AN6540


1 IN
2 GND
3
4 OUT

IC851 : KHA157 . . . . KEH-M5000SDK/WG, KEH-M5000B/EW

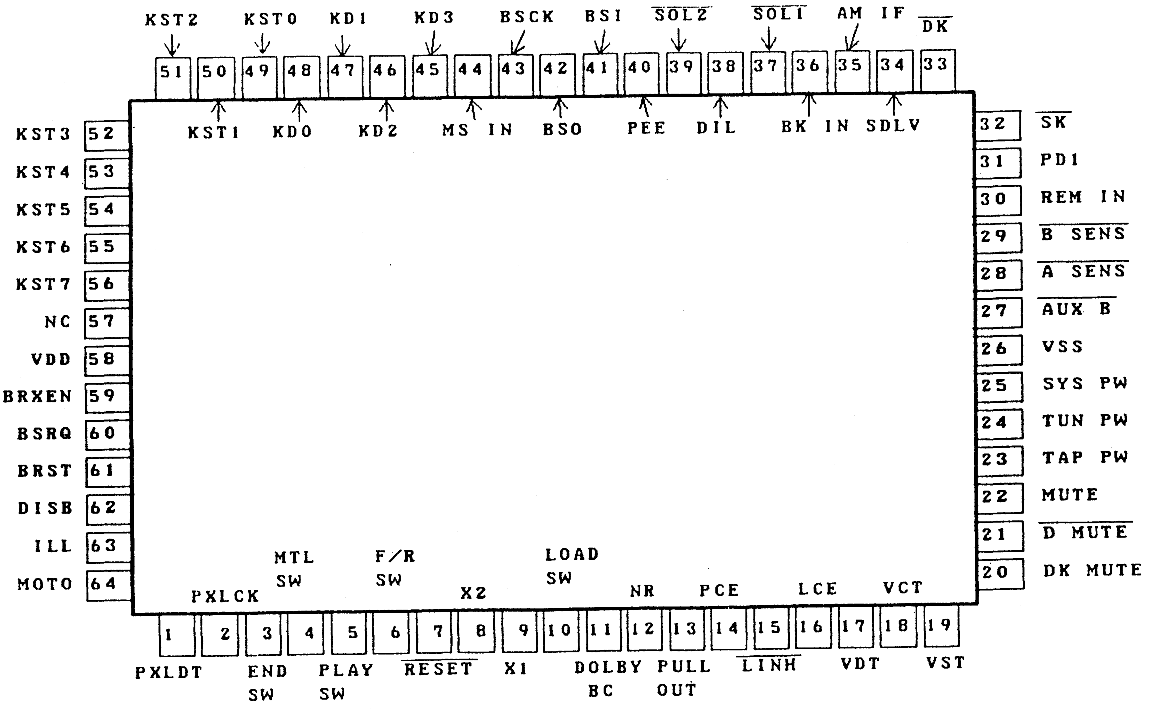

11K
100P
11K
11K
11K
100P
4.7
1K
22K
11K
100P
11K
11K
11K
100P
4.7
1K
22K
R04.7
1 GND1
2 VCC
4 1/2VCC (1)
5 1/2VCC (2)
6 IN1-1
7 IN1-2
8 OUT1
9 IN2-1
10 IN2-2
11 OUT2
12 GND2
13 CT

IC901 : LC7582P


S1 1
S2 2
S3 3
S4 4
S5 5
S6 6
S7 7
S8 8
S9 9
S10 10
S11 11
S12 12
S13 13
S14 14
S15 15
S16 16
S17 17
S18 18
S19 19
S20 20
S21 21
S22 22
S23 23
(OPEN) 24
S24 25
S25 26
S26 27
S27 28
S28 29
S29 30
S30 31
S31 32
S32 33
S33 34
S34 35
S35 36
S36 37
S37 38
S38 39
S39 40
S40 41
S41 42
S42 43
S43 44
DSP2 45
AD2 46
DSP1 47
AD1 48
49 DSP OUT
50 ADD 1
51 ADD 2
52 ADD 3
53 ADD 4
54 ADD 5
55 OSC
56 VDD
57 INH
58 VLCD
59 VSS
60 CE
61 CLK
62 DATA
63 COM 2
64 COM 1
SHIFT REGISTOR (56bits)
COMMON DRIVER
CLOCK GENERATOR
LATCH1 & DRIVER (1~56bits)
LATCH2 & DRIVER (57~112bits)
ADC
ADC

IC701 : *PD4190

*IC's marked by *are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.


1 PXLDT
2 PXLCK
3 END SW
4 MTL SW
5 PLAY SW
6 F/R SW
7 RESET
8 X2
9 X1
10 LOAD SW
11 DOLBY BC
12 NR
13 PULL OUT
14 PCE
15 LINH
16 LCE
17 VDT
18 VCT
19 VST
20 DK MUTE
21 D MUTE
22 MUTE
23 TAP PW
24 TUN PW
25 SYS PW
26 VSS
27 AUX B
28 A SENS
29 B SENS
30 REM IN
31 PD1
32 SK
33 DK
34 SDLV
35 AM IF
36 BK IN
37 SOL1
38 DIL
39 SOL2
40 PEE
41 BSI
42 BSO
43 BSCK
44 MS IN
45 KD3
46 KD2
47 KD1
48 KD0
49 KST0
50 KST1
51 KST2
52 KST3
53 KST4
54 KST5
55 KST6
56 KST7
57 NC
58 VDD
59 BRXEN
60 BSRQ
61 BRST
62 DISB
63 ILL
64 MOTO

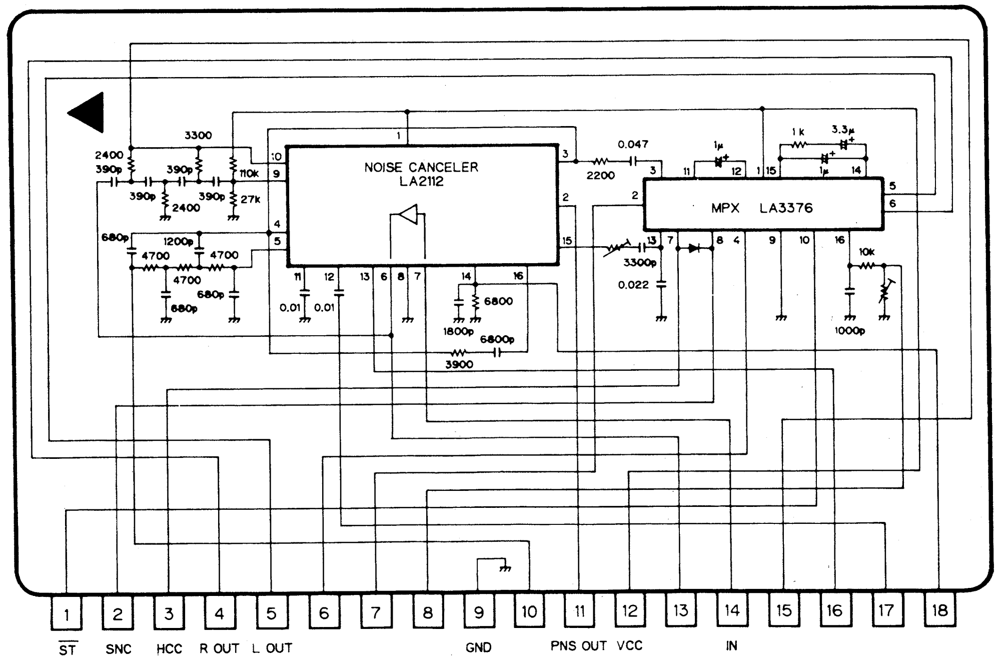
- Pin Functions(PD4190)

Pin No.	Pin Name	I/O	Output Format	Function and Operation	STBY	RST
1	PXLDT	Output	C	LCD driver IC and PLL IC data line	L	Hi-Z
2	PXLCK	Output	C	LCD driver IC and PLL IC clock line	L	Hi-Z
3	END SW	Input		Deck END sensor input		
4	MTL SW	Input		Deck METAL(70 μ S) sensor input		
5	PLAY SW	Input		Deck head position(PLAY) sensor input		
						1
6	F/R SW	Input		Deck FWD/REV sensor input		
7	$\overline{\text{RESET}}$	Input		Reset input		
8	X2			Crystal oscillating element connection pin		
9	X1			Crystal oscillating element connection pin		
10	LOAD SW	Input		Deck LOAD/EJECT sensor input		
11	DOLBYBC	Output	C	Not used	L	Hi-Z
12	NR	Output	C	Dolby NR ON/OFF output	L	Hi-Z
13	PULL UP	Output	C	Cut pull up for deck switches when BACK UP is OFF	Hi-Z	
14	PCE	Output	C	Chip enable output for PLL IC (IC501:LC7218)	L	Hi-Z
15	$\overline{\text{LINH}}$	Output	C	INH control output for LCD driver IC(IC901:LC7582P)	L	Hi-Z
16	LCE	Output	C	Chip enable or strobe output for LCD driver IC	L	Hi-Z
17	VDT	Output	C	Data output for electronic volume IC(IC601:KHA255B)	L	Hi-Z
18	VCK	Output	C	Clock output for electronic volume IC(IC601:KHA255B)	L	Hi-Z
19	VST	Output	C	Strobe output for electronic volume IC(IC601:KHA255B)	L	Hi-Z
20	DK MUTE	Output	C	Not used	H	Hi-Z
21	$\overline{\text{D MUTE}}$	Output	C	Deck mute output	H	Hi-Z
22	MUTE	Output	C	System mute output	H	Hi-Z
23	TAP PW	Output	C	Deck power supply control	L	Hi-Z
24	TUN PW	Output	C	Tuner power supply control	L	Hi-Z
25	SYS PW	Output	C	System(power amp)power supply control	L	Hi-Z
26	VSS			GND		
27	$\overline{\text{AUX B}}$	Input		AUX B sensor input		
28	$\overline{\text{A SENS}}$	Input		ACC power supply sensor input		
29	$\overline{\text{B SENS}}$	Input		BACK UP power supply sensor input		
30	REM IN	Input		Remote control pulse input		
31	PDI	Input		Data input for PLL IC (IC501:LC7218)	L	Hi-Z
32	$\overline{\text{SK}}$	Input		SK signal input		
33	$\overline{\text{DK}}$	Input		DK signal input		
34	SDLEV	Input		Input level sensor input		
35	AM IF	Input		AM IF count input		
36	BK IN			Not used		
37	$\overline{\text{SOL 1}}$	Output	C	Output for deck solenoid 1 (head position)	L	Hi-Z
38	DIL	Output	C	Deck FWD/REV head selector output	Keep	Hi-Z
39	$\overline{\text{SOL 2}}$	Output	C	Output for deck solenoid 2 (DIR selector and EJECT)	L	Hi-Z
40	PEE	Output	C	Beep tone output	L	Hi-Z

Pin No.	Pin Name	I/O	Output Format	Function and Operation	STBY	RST
41	BSI	Input		Bus serial data input		
42	BSO	Output	C	Bus serial data output		
43	BSCK	Input/ Output	C	Bus serial clock input/output		
44	MS IN	Input		Music signal input		
45～48	KD3～KD0	Input		Key return input		
49	KST0	Output	NM	Model sense strobe output	Hi-Z	Hi-Z
50	KST1	Output	NM	Model sense strobe output	Hi-Z	Hi-Z
51～56	KST2～ KST7	Output	NM	Key strobe output		
57	NC					
58	VDD					
59	BRXEN	Input/ Output	C	Bus reception enable line		
60	BSRQ	Input		Data communications serial poll request	L	Hi-Z
61	BRST	Output	C	Bus reset	H	Hi-Z
62	DISB	Output	C	AUX control output	L	HI-Z
63	ILL	Output	C	Illumination green/amber selector output	Keep	Hi-Z
64	MOTO	Output	C	Deck main motor control output	L	Hi-Z

Output Format	Meaning
C	CMOS Output
NM	Neutral resistivity N channel open drain

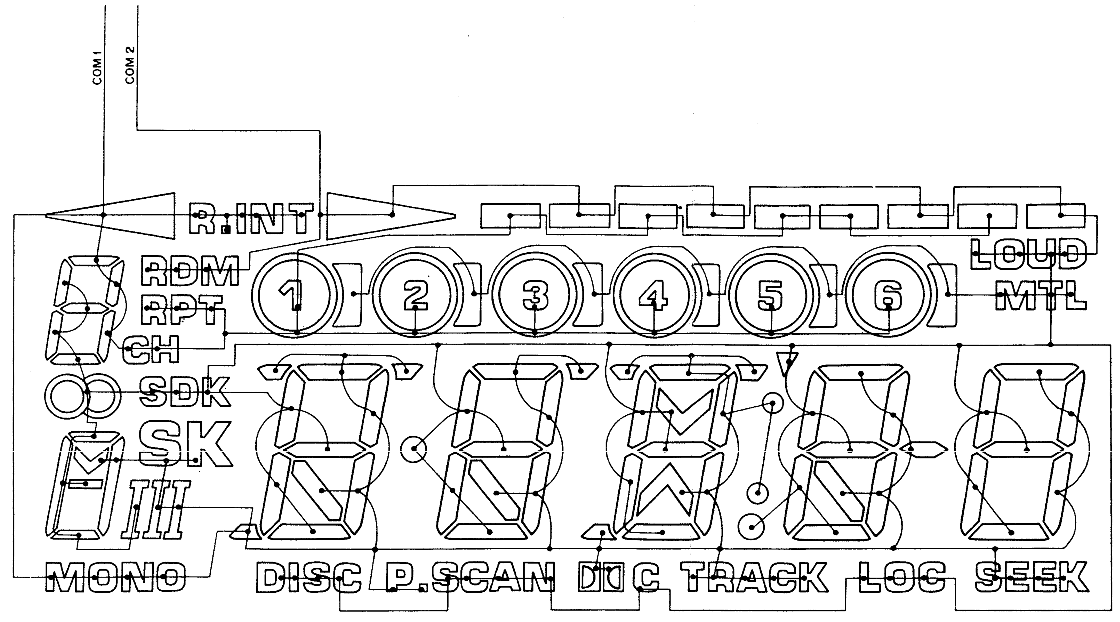
IC101 : KHA146



NOISE CANCELER
LA2112
MPX LA3376
3300
2400
390p
390p
390p
390p
110k
27k
2400
680p
1200p
4700
4700
4700
680p
680p
0.01
0.01
6800
1800p
6800p
3900
0.047
2200
1μ
1k
3.3μ
1μ
3300p
0.022
10k
1000p
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
ST
SNC
HCC
R OUT
L OUT
GND
PNS OUT
VCC
IN

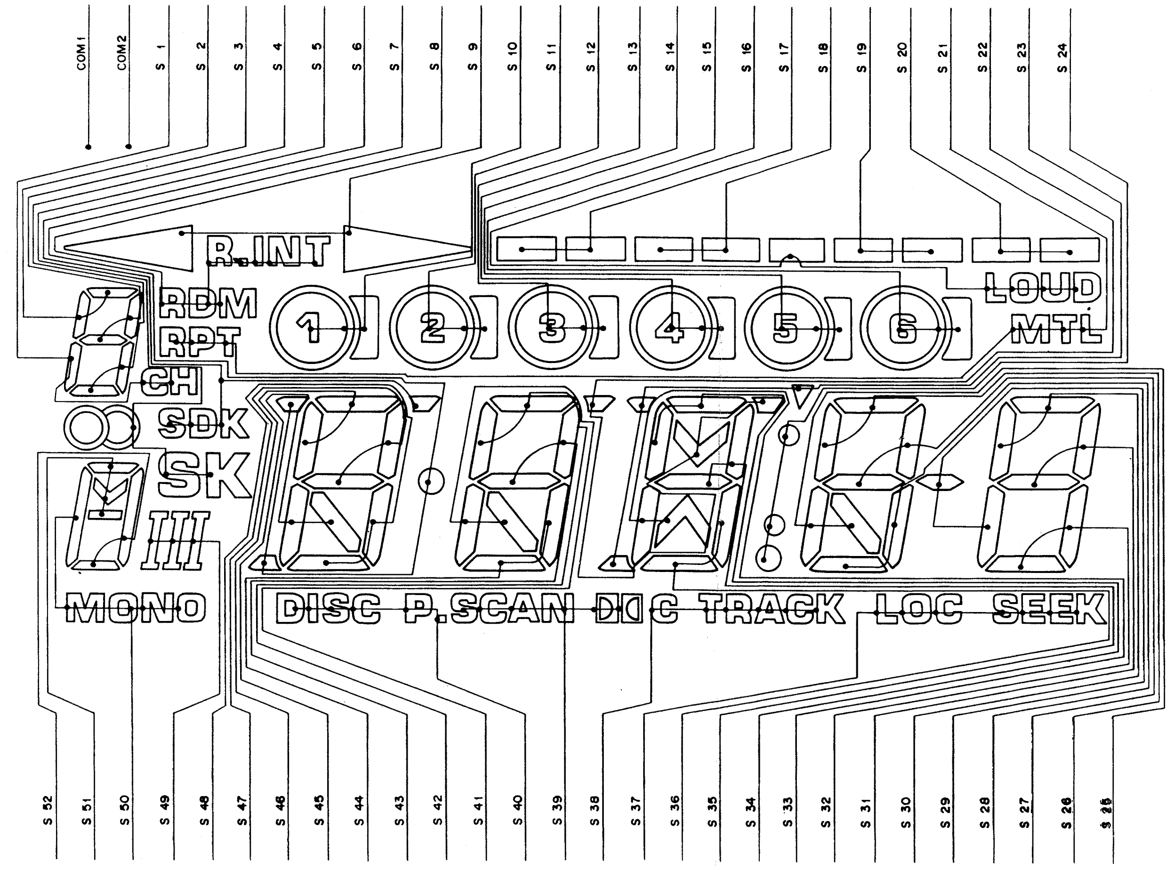
• LCD (CAW1061)

COMMON



COM 1
COM 2
R.INT
RDM
RPT
CH
SDK
SK
LOUD
MTL
1
2
3
4
5
6
MONO
DISC
P.SCAN
DIIC
TRACK
LOC
SEEK

SEGMENT



COM 1
COM 2
S 1
S 2
S 3
S 4
S 5
S 6
S 7
S 8
S 9
S 10
S 11
S 12
S 13
S 14
S 15
S 16
S 17
S 18
S 19
S 20
S 21
S 22
S 23
S 24
R.INT
RDM
RPT
CH
SDK
SK
LOUD
MTL
1
2
3
4
5
6
MONO
DISC
P.SCAN
DIIC
TRACK
LOC
SEEK
S 52
S 51
S 50
S 49
S 48
S 47
S 46
S 45
S 44
S 43
S 42
S 41
S 40
S 39
S 38
S 37
S 36
S 35
S 34
S 33
S 32
S 31
S 30
S 29
S 28
S 27
S 26
S 25

• I

AGC 3

INPUT1

GND 2

GND 7

G2 4

VCO 6

•

AGC

INPUT

GND

GND

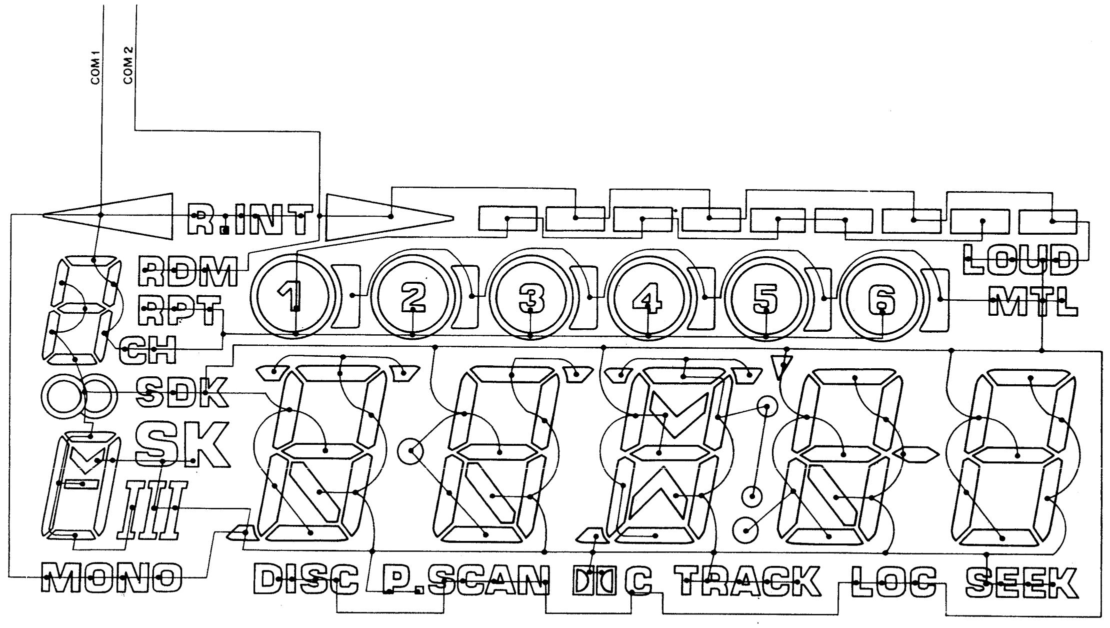
G2

VCO

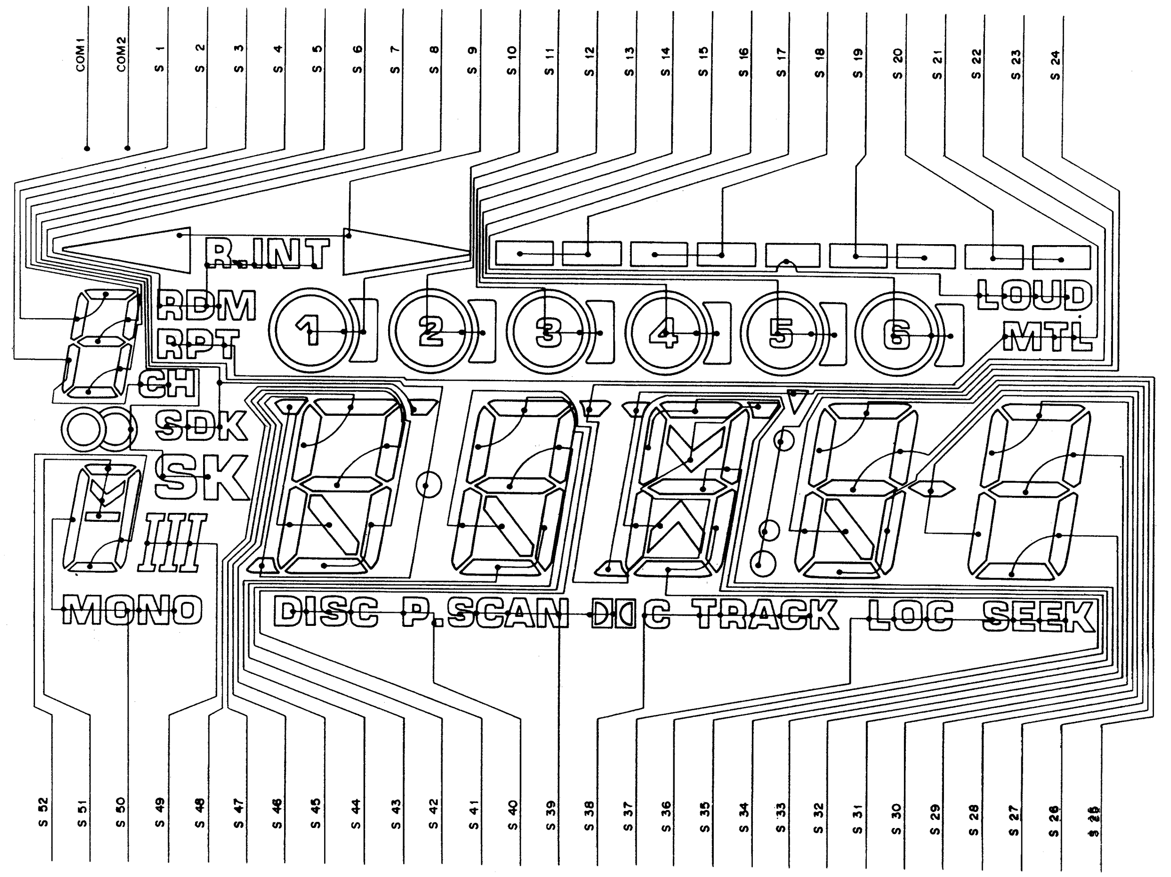
Y	RST
Z	Hi-Z
Z	Hi-Z
	Hi-Z
	Hi-Z
	HI-Z
p	Hi-Z
	Hi-Z

• LCD (CAW1061)

COMMON


COM 1
COM 2
R.INT
RDM
RPT
CH
SDK
SK
LOUD
MTL
1
2
3
4
5
6
MONO
DISC
P.SCAN
C
TRACK
LOC
SEEK

SEGMENT

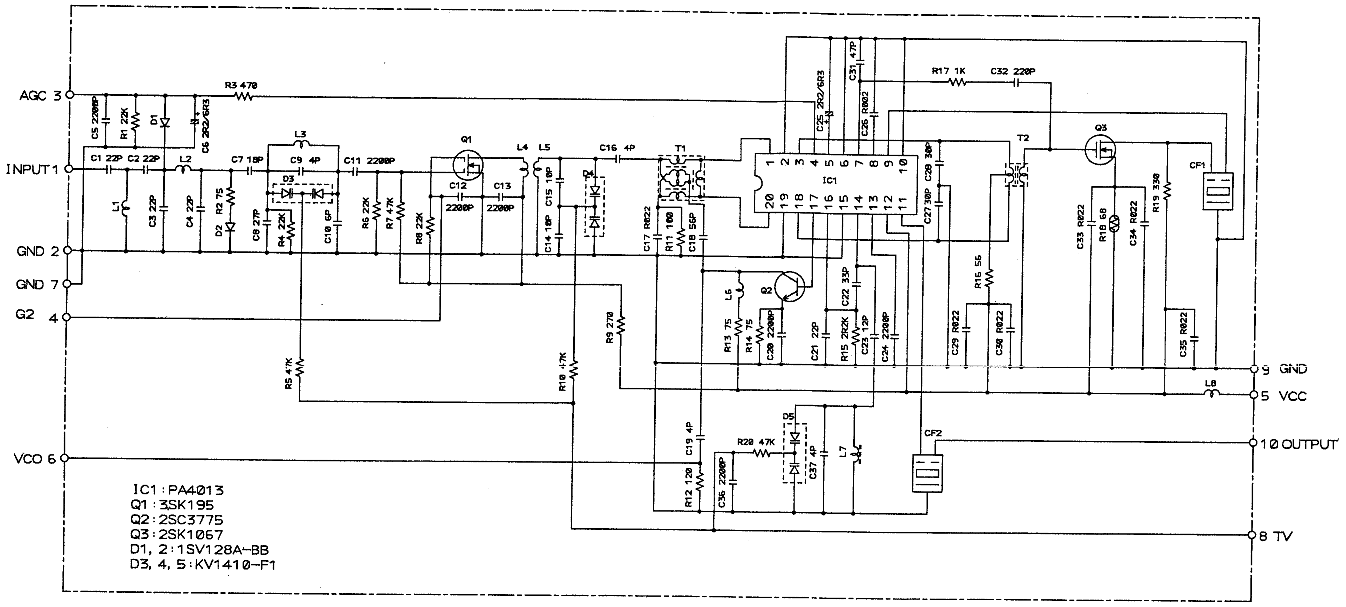

COM1
COM2
S 1
S 2
S 3
S 4
S 5
S 6
S 7
S 8
S 9
S 10
S 11
S 12
S 13
S 14
S 15
S 16
S 17
S 18
S 19
S 20
S 21
S 22
S 23
S 24
R.INT
RDM
RPT
CH
SDK
SK
LOUD
MTL
1
2
3
4
5
6
MONO
DISC
P.SCAN
C
TRACK
LOC
SEEK
S 52
S 51
S 50
S 49
S 48
S 47
S 46
S 45
S 44
S 43
S 42
S 41
S 40
S 39
S 38
S 37
S 36
S 35
S 34
S 33
S 32
S 31
S 30
S 29
S 28
S 27
S 26
S 25

• FM FRONT END (CWB1037)

KEH-M5000SDK/WG, KEH-M5000B/EW

NOTE:
:Chip Resistor
:Chip Capacitor
:Chip Diode
:Chip Transistor

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022


AGC 3
INPUT1
GND 2
GND 7
G2 4
VCO 6
9 GND
5 VCC
10 OUTPUT
8 TV
R3 470
R17 1K
C32 220P
IC1
Q1
Q2
Q3
T1
T2
CF1
CF2
L8

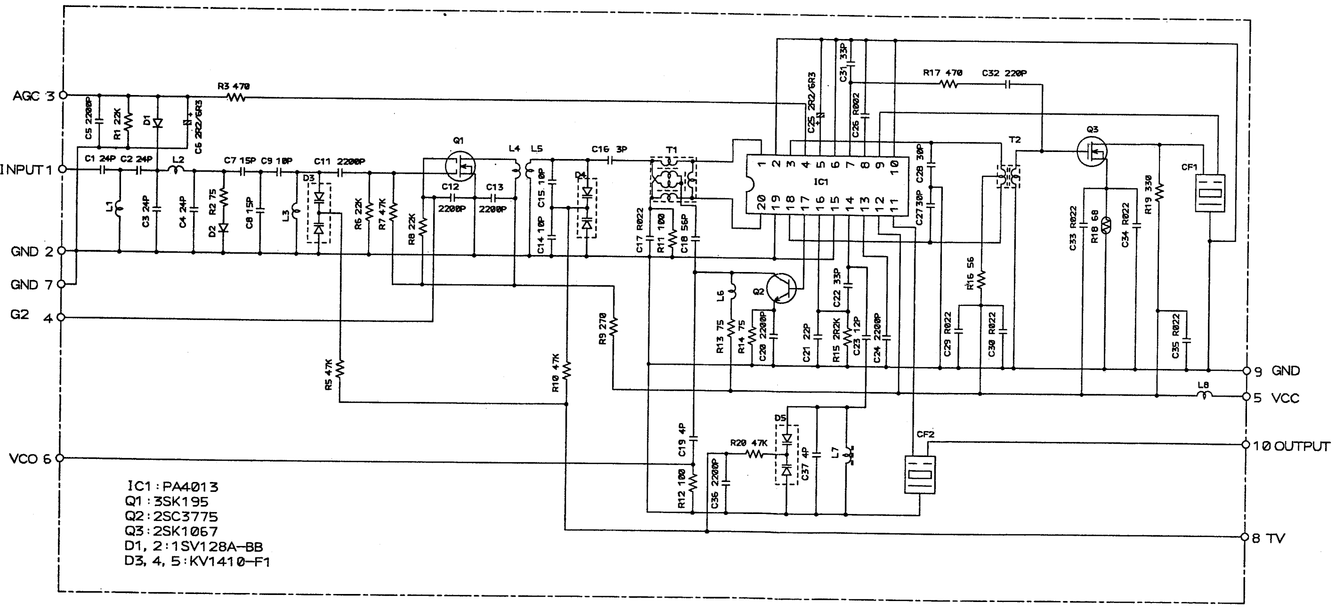
IC1 : PA4013
Q1 : 3SK195
Q2 : 2SC3775
Q3 : 2SK1067
D1, 2 : 1SV128A-BB
D3, 4, 5 : KV1410-F1

• FM FRONT END (CWB1039)

KEH-M5000QR/ES

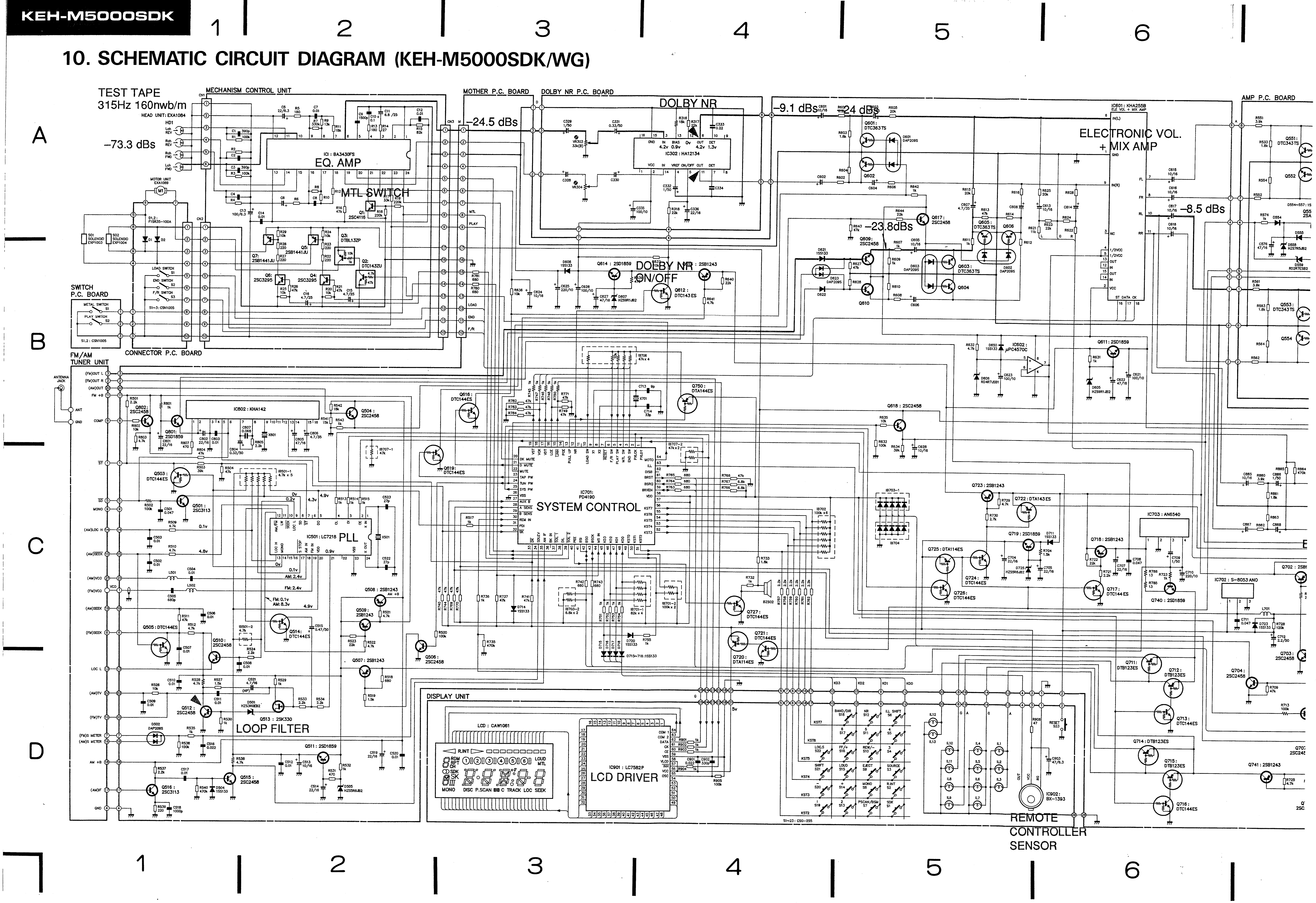
NOTE:
:Chip Resistor
:Chip Capacitor
:Chip Diode
:Chip Transistor

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

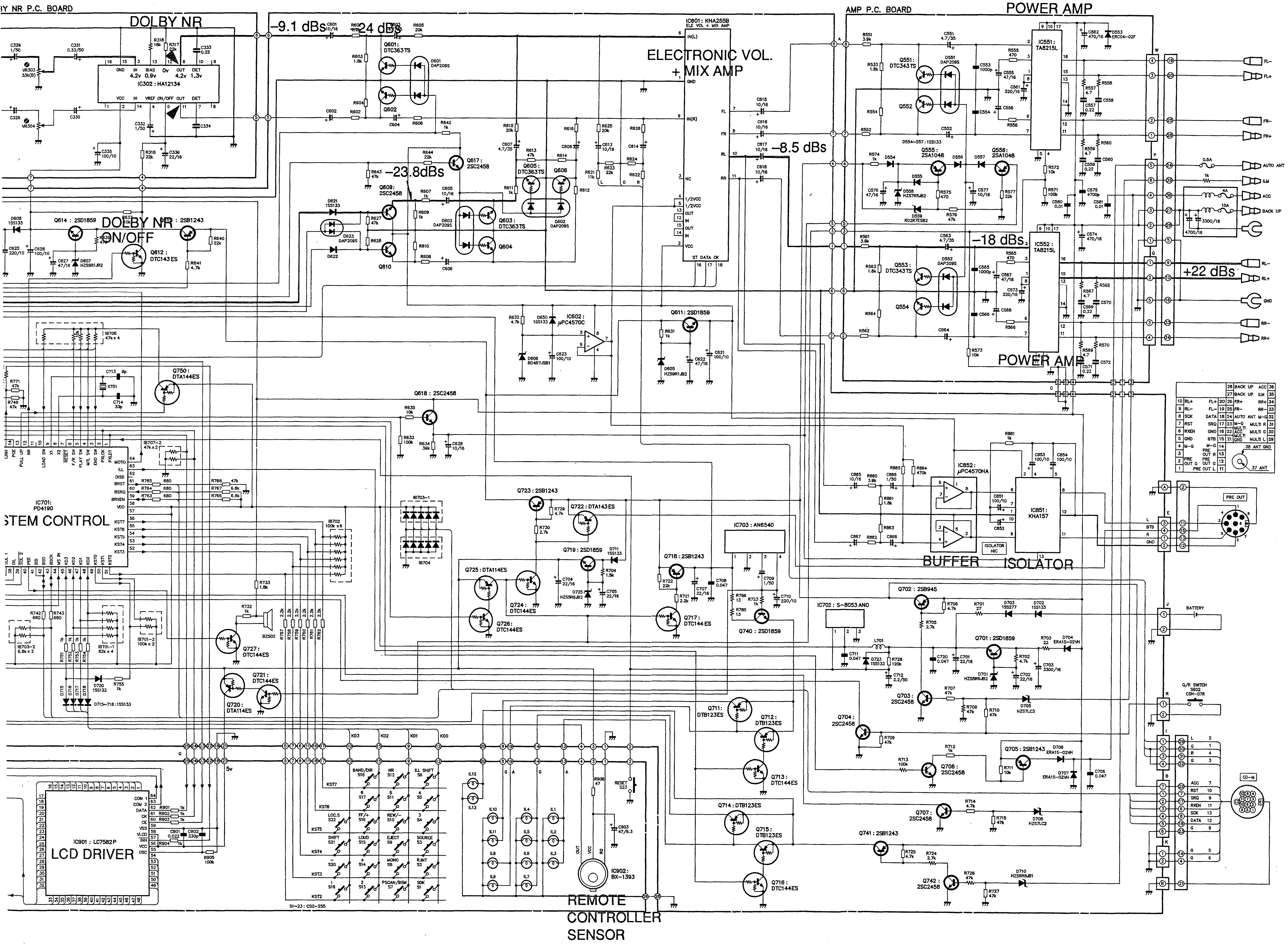

AGC 3
INPUT1
GND 2
GND 7
G2 4
VCO 6
9 GND
5 VCC
10 OUTPUT
8 TV
R3 470
R17 470
C32 220P
IC1
Q1
Q2
Q3
T1
T2
CF1
CF2
L8

IC1 : PA4013
Q1 : 3SK195
Q2 : 2SC3775
Q3 : 2SK1067
D1, 2 : 1SV128A-BB
D3, 4, 5 : KV1410-F1

10. SCHEMATIC CIRCUIT DIAGRAM (KEH-M5000SDK/WG)


1
2
3
4
5
6
A
B
C
D
TEST TAPE
315Hz 160nwb/m
HEAD UNIT: EXA1084
-73.3 dBs
MECHANISM CONTROL UNIT
IC1 : BA3430FS
EQ. AMP
MTL SWITCH
MOTOR UNIT EXA1089
SWITCH P.C. BOARD
CONNECTOR P.C. BOARD
MOTHER P.C. BOARD
DOLBY NR P.C. BOARD
DOLBY NR
-24.5 dBs
IC302 : HA12134
-9.1 dBs
-24 dBs
-23.8dBs
-8.5 dBs
IC601 : KHA255B
ELECTRONIC VOL.
+ MIX AMP
AMP P.C. BOARD
DOLBY NR ON/OFF
FM/AM TUNER UNIT
IC502 : KHA142
IC501 : LC7218
PLL
LOOP FILTER
IC701 : PD4190
SYSTEM CONTROL
IC602 : μPC4570C
IC703 : AN6540
IC702 : S-8053 ANO
DISPLAY UNIT
LCD : CAW1061
IC901 : LC7582P
LCD DRIVER
IC902 : BX-1393
REMOTE CONTROLLER SENSOR

WG)


4
5
6
7
8
9
A
B
C
D
DOLBY NR P.C. BOARD
DOLBY NR
IC302 : HA12134
-9.1 dBs
-24 dBs
-23.8dBs
-8.5 dBs
-18 dBs
+22 dBs
DOLBY NR ON/OFF
ELECTRONIC VOL. + MIX AMP
IC601 : KHA255B
AMP P.C. BOARD
POWER AMP
IC551 : TA8215L
IC552 : TA8215L
IC602 : μPC4570C
IC701 : PD4190
SYSTEM CONTROL
IC703 : AN6540
IC702 : S-8053 ANO
IC852 : μPC4570HA
BUFFER
IC851 : KHA157
ISOLATOR
IC901 : LC7582P
LCD DRIVER
IC902 : BX-1393
REMOTE CONTROLLER SENSOR
PRE OUT
BATTERY
Q/R SWITCH
CD-M
FL-
FL+
FR-
FR+
AUTO ANT
ILM
ACC
BACK UP
GND
RL-
RL+
RR-
RR+
S1~23 : CSO-255

SWITCHES:

●SWITCH P.C.BOARD

S1: METAL SWITCH·····················ON—OFF

S2: PLAY SWITCH······················ON—OFF

●CONNECTOR P.C.BOARD

S1: LOAD SWITCH······················ON—OFF

S2: END SWITCH·······················ON—OFF

S3: F/R SWITCH·······················ON—OFF

The underlined indicates the switch position.

Tuner Amp Unit
Consists of ● Mother P.C. Board ● Amp P.C. Board ● Dolby NR P.C. Board

NOTE :

Indicates a chip resistor.

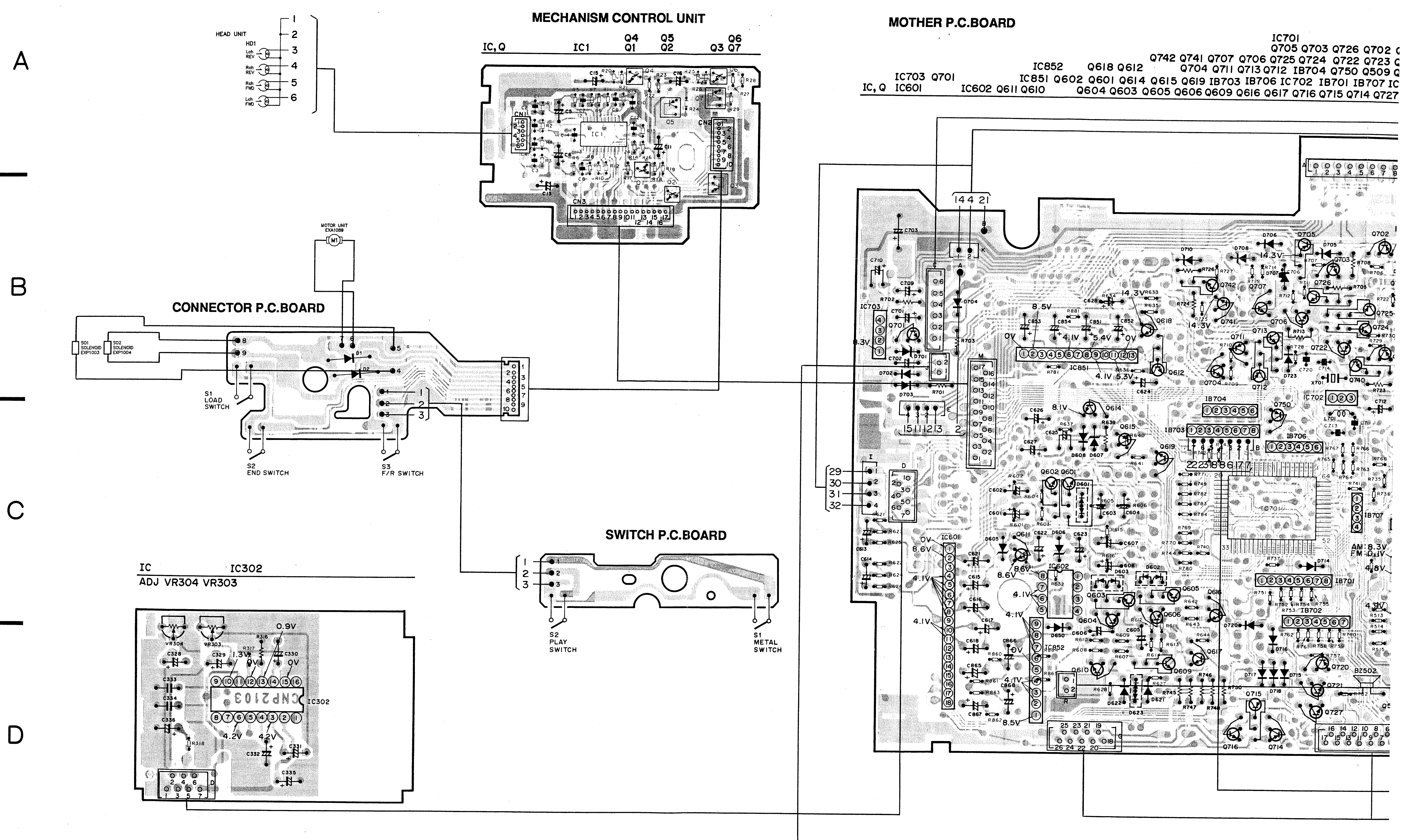
Indicates a chip capacitor.

Indicates a chip transistor.

Indicates a chip diode.

Fig. 10

11. CONNECTION DIAGRAM (KEH-M5000SDK/WG)


1
2
3
4
5
6
A
B
C
D
HEAD UNIT
HD1
Lch REV
Rch REV
Rch FWD
Lch FWD
MECHANISM CONTROL UNIT
IC, Q
IC1
Q4 Q1
Q5 Q2
Q6 Q3 Q7
CN1
CN2
CN3
MOTOR UNIT
EXA1089
M1
CONNECTOR P.C.BOARD
S01 SOLENOID EXP1003
S02 SOLENOID EXP1004
S1 LOAD SWITCH
S2 END SWITCH
S3 F/R SWITCH
D1
D2
SWITCH P.C.BOARD
S2 PLAY SWITCH
S1 METAL SWITCH
IC
IC302
ADJ VR304 VR303
CNP2103
0.9V
1.3V
0V
4.2V
MOTHER P.C.BOARD
IC701
Q705 Q703 Q726 Q702
Q742 Q741 Q707 Q706 Q725 Q724 Q722 Q723
IC852 Q618 Q612 Q704 Q711 Q713 Q712 IB704 Q750 Q509
IC703 Q701 IC851 Q602 Q601 Q614 Q615 Q619 IB703 IB706 IC702 IB701 IB707
IC, Q IC601 IC602 Q611 Q610 Q604 Q603 Q605 Q606 Q609 Q616 Q617 Q716 Q715 Q714 Q727
IC703
IC851
IC601
IC602
IC852
IB701
IB702
IB703
IB704
IB706
IB707
BZ502
8.3V
8.5V
14.3V
4.1V
5.4V
5.3V
8.1V
8.6V
AM: 8.3V
FM: 0.1V
29
30
31
32

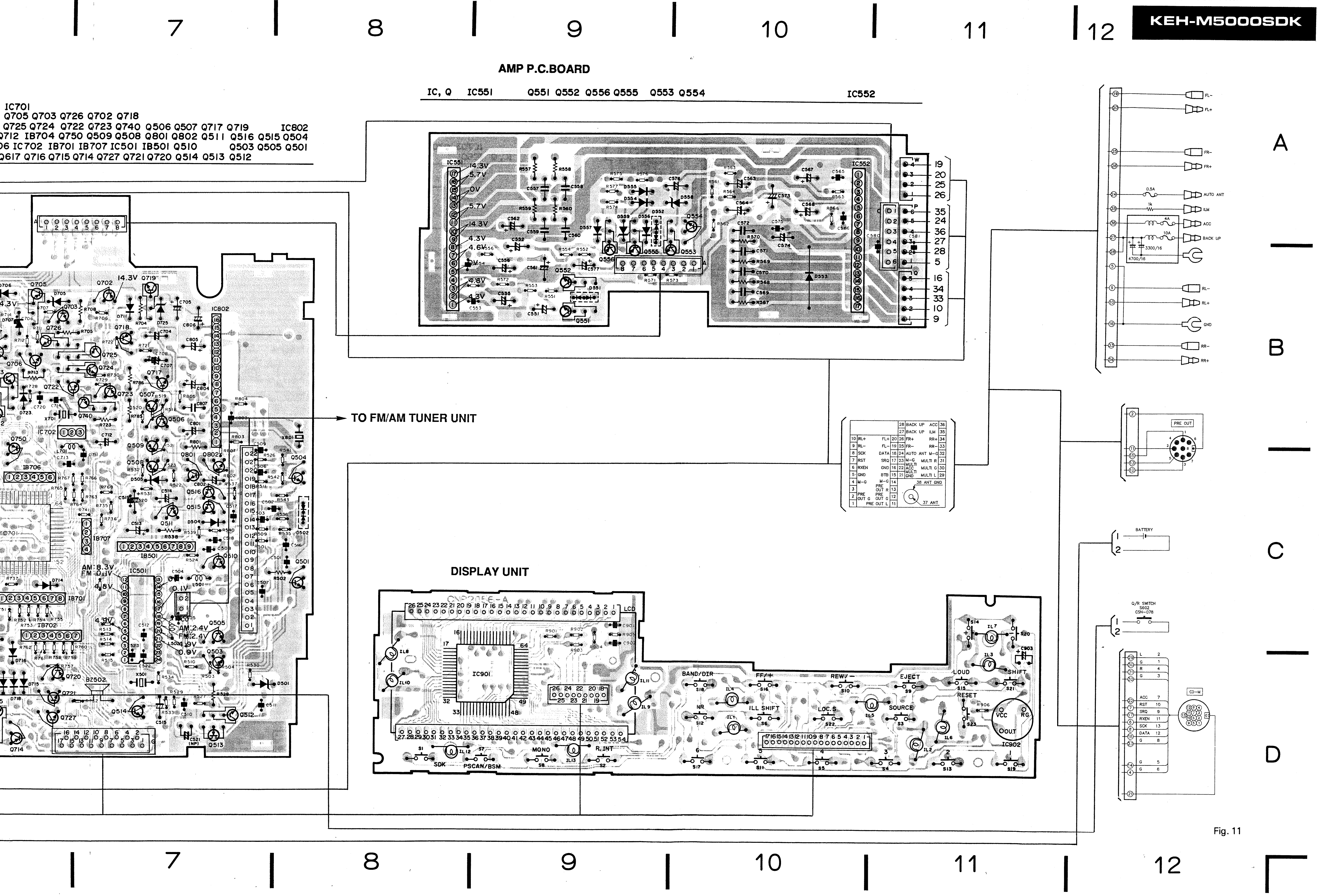
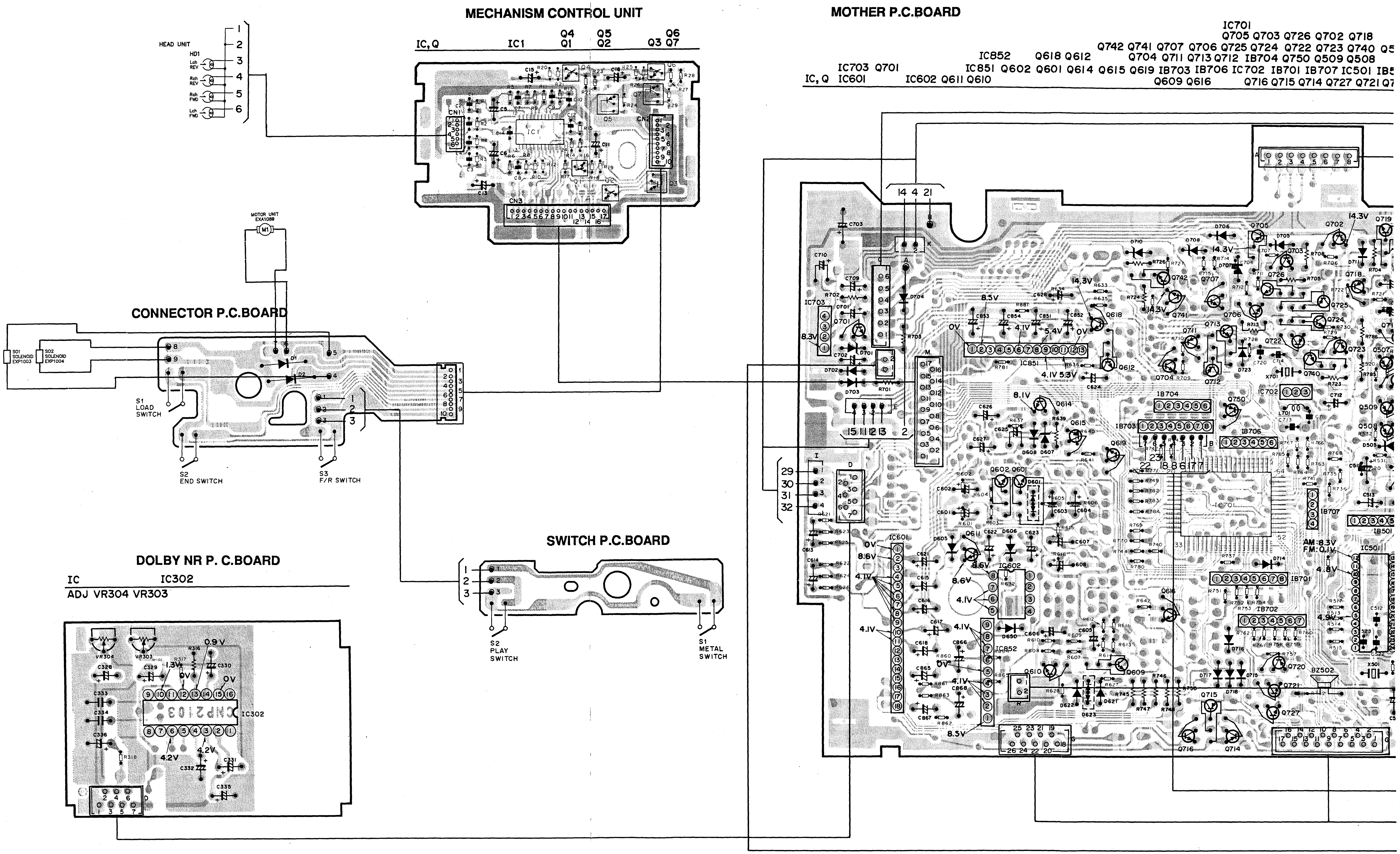

7
8
9
10
11
12
AMP P.C.BOARD
IC, Q IC551 Q551 Q552 Q556 Q555 Q553 Q554 IC552
IC701
Q705 Q703 Q726 Q702 Q718
Q725 Q724 Q722 Q723 Q740 Q506 Q507 Q717 Q719 IC802
Q712 IB704 Q750 Q509 Q508 Q801 Q802 Q511 Q516 Q515 Q504
06 IC702 IB701 IB707 IC501 IB501 Q510 Q503 Q505 Q501
Q617 Q716 Q715 Q714 Q727 Q721 Q720 Q514 Q513 Q512
14.3V
5.7V
0V
5.7V
14.3V
4.3V
4.6V
4.6V
4.3V
19
20
25
26
35
24
36
27
28
5
16
34
33
10
9
TO FM/AM TUNER UNIT
AM:8.3V
FM:0.1V
4.8V
0.1V
AM:2.4V
FM:2.4V
4.9V
0.9V
28 BACK UP ACC 36
27 BACK UP ILM 35
10 RL+ FL+ 20 26 FR+ RR+ 34
9 RL− FL− 19 25 FR− RR− 33
8 SCK DATA 18 24 AUTO ANT M−G 32
7 RST SRQ 17 23 M−G MULTI R 31
6 RXEN GND 16 22 ACC MULTI G 30
5 GND BTB 15 21 GND MULTI L 29
4 M−G M−G 14
3 PRE OUT R 13
2 PRE OUT G PRE OUT G 12
1 PRE OUT L 11
38 ANT GND
37 ANT
FL−
FL+
FR−
FR+
0.5A
AUTO ANT
1k
ILM
4A
ACC
10A
BACK UP
3300/16
4700/16
RL−
RL+
GND
RR−
RR+
PRE OUT
BATTERY
Q/R SWITCH
S602
CSN-078
CD-M
DISPLAY UNIT
LCD
IC901
IC902
BAND/DIR
FF/+
REW/−
EJECT
LOUD
SHIFT
RESET
NR
ILL SHIFT
LOC.S
SOURCE
SDK
PSCAN/BSM
MONO
R.INT
VCC
RG
OUT

Fig. 11

12. CONNECTION DIAGRAM (KEH-M5000B/EW)


1
2
3
4
5
6
A
B
C
D
MECHANISM CONTROL UNIT
IC, Q
IC1
Q4 Q1
Q5 Q2
Q6 Q3 Q7
CN1
CN2
CN3
HEAD UNIT
HD1
Lch REV
Rch REV
Rch FWD
Lch FWD
MOTOR UNIT EXA1089
M1
CONNECTOR P.C.BOARD
SO1 SOLENOID EXP1003
SO2 SOLENOID EXP1004
D1
D2
S1 LOAD SWITCH
S2 END SWITCH
S3 F/R SWITCH
SWITCH P.C.BOARD
S2 PLAY SWITCH
S1 METAL SWITCH
DOLBY NR P. C.BOARD
IC
IC302
ADJ VR304 VR303
VR304
VR303
CNP2103
1.3V
0.9V
0V
4.2V
MOTHER P.C.BOARD
IC, Q IC601
IC703 Q701
IC602 Q611 Q610
IC851 Q602 Q601 Q614 Q615 Q619 IB703 IB706 IC702 IB701 IB707 IC501
IC852 Q618 Q612
Q742 Q741 Q707 Q706 Q725 Q724 Q722 Q723 Q740
Q704 Q711 Q713 Q712 IB704 Q750 Q509 Q508
Q609 Q616
IC701
Q705 Q703 Q726 Q702 Q718
Q716 Q715 Q714 Q727 Q721
IC703
IC851
IC852
IC601
IC602
IC701
IC702
IC501
IB701
IB702
IB703
IB704
IB706
IB707
IB501
X701
X501
BZ502
14 4 21
15 11 12 13
29
30
31
32
8.3V
8.5V
14.3V
4.1V
5.4V
5.3V
8.1V
8.6V
4.8V
4.9V
AM:8.3V
FM:0.1V
0V

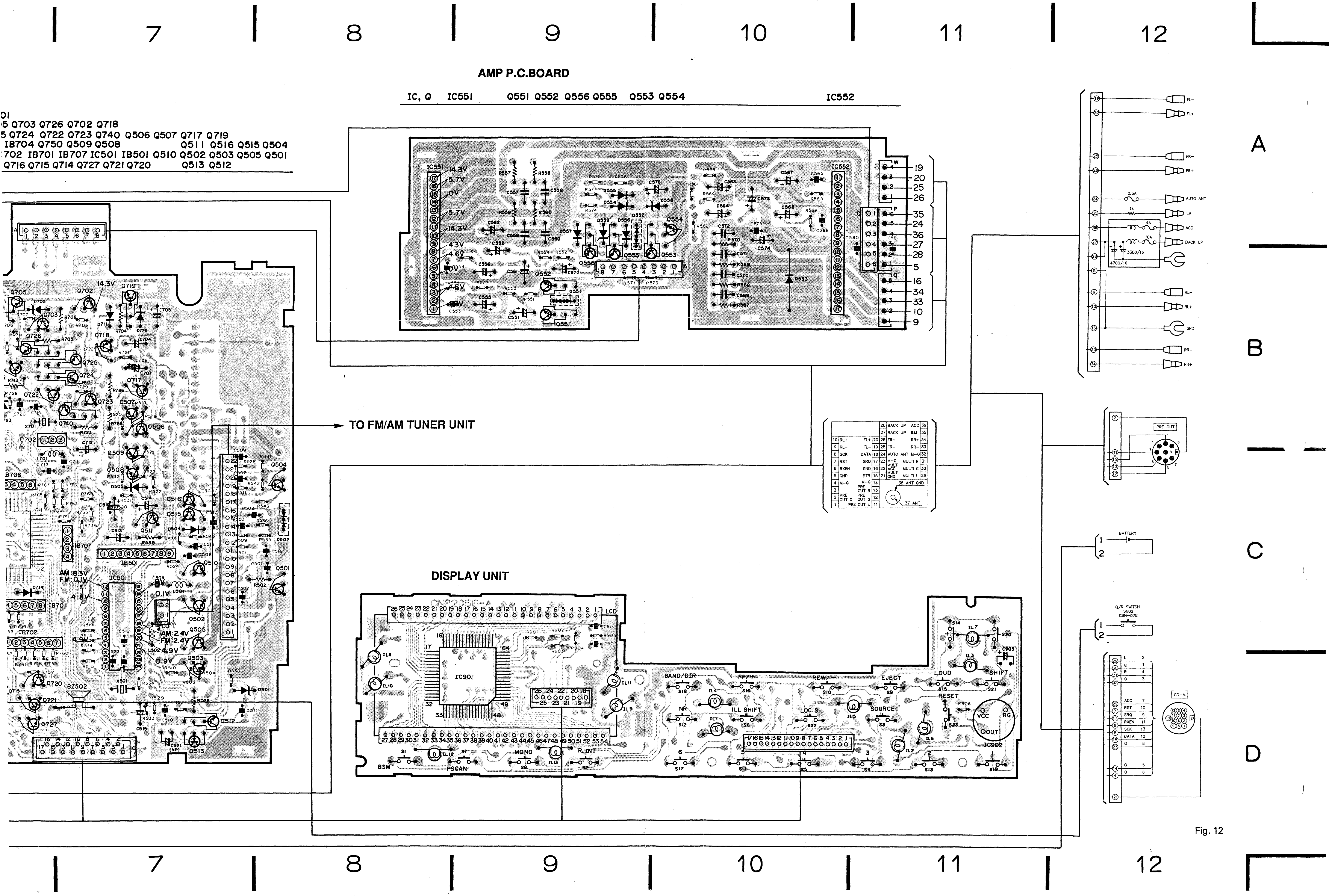
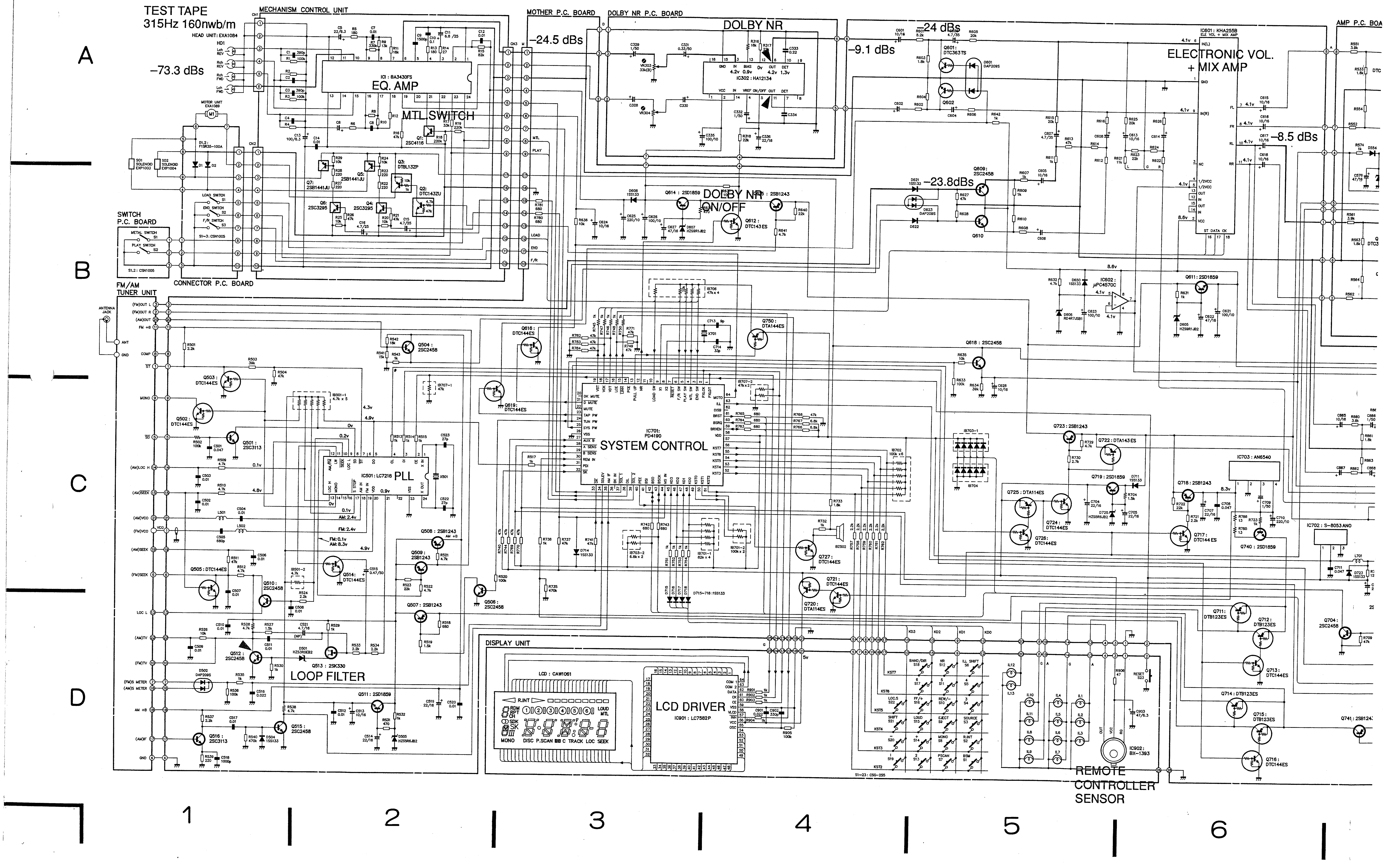
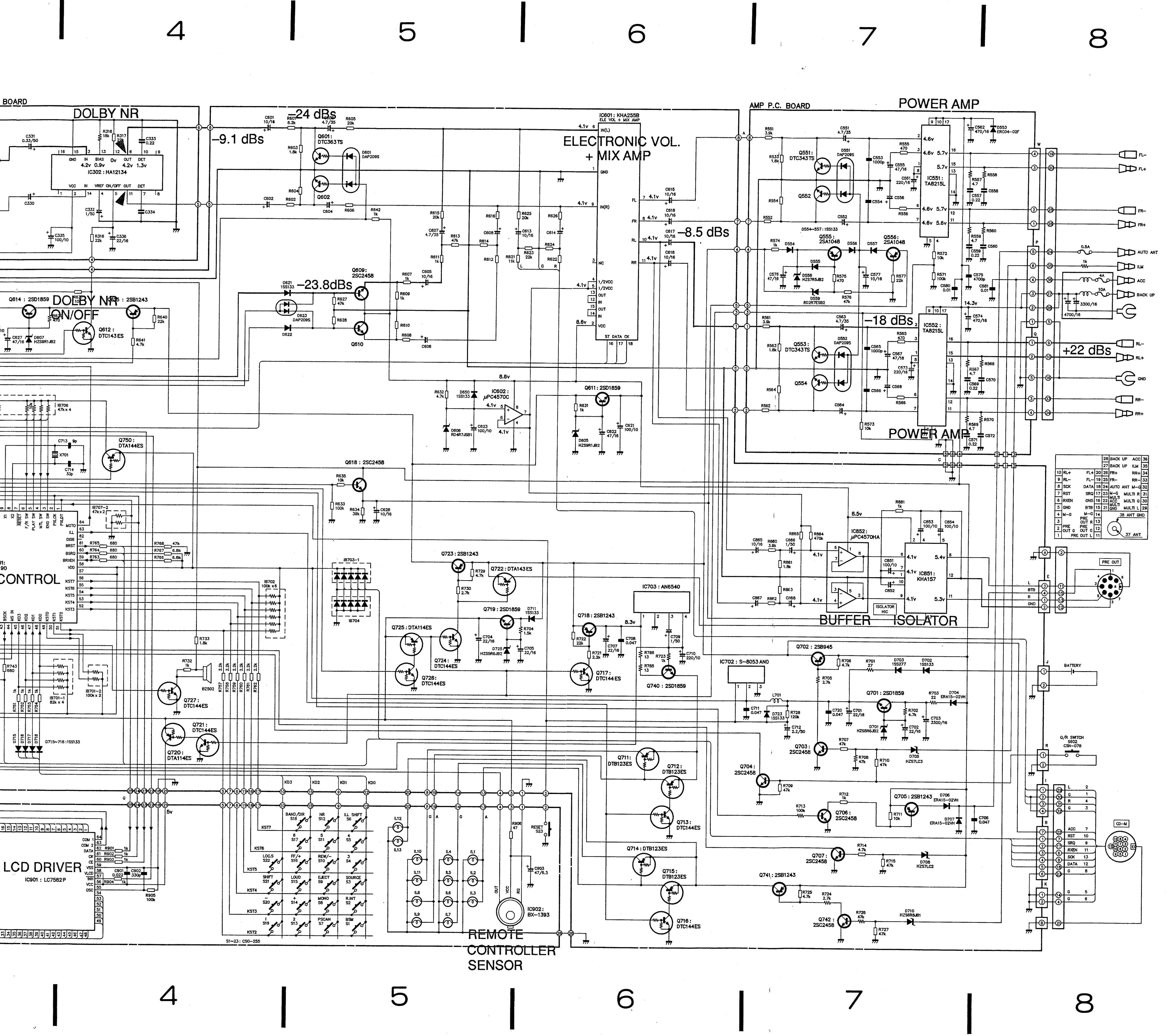

7
8
9
10
11
12
A
B
C
D
AMP P.C.BOARD
IC, Q IC551 Q551 Q552 Q556 Q555 Q553 Q554 IC552
IC551
IC552
TO FM/AM TUNER UNIT
DISPLAY UNIT
IC901
IC902
BAND/DIR
FF/+
REW/−
EJECT
LOUD
SHIFT
RESET
NR
ILL SHIFT
LOC. S
SOURCE
BSM
PSCAN
MONO
R. INT
LCD
IC501
IC702
IB701
IB702
IB706
IB707
IB501
BZ502
FL−
FL+
FR−
FR+
AUTO ANT
ILM
ACC
BACK UP
GND
RL−
RL+
RR−
RR+
PRE OUT
BATTERY
Q/R SWITCH S602 CSN-078
CD-M

Fig. 12

13. SCHEMATIC CIRCUIT DIAGRAM (KEH-M5000B/EW)



1
2
3
4
5
6
A
B
C
D
TEST TAPE
315Hz 160nwb/m
HEAD UNIT: EXA1084
-73.3 dBs
MECHANISM CONTROL UNIT
IC1 : BA3430FS
EQ. AMP
MTL SWITCH
Q1: 2SC4116
Q3: DTBL13ZP
Q2: DTC143ZU
Q4: 2SC3295
Q5: 2SB1441JU
Q6: 2SC3295
Q7: 2SB1441JU
MOTOR UNIT EXA1088
SO1 SOLENOID EXP1003
SO2 SOLENOID EXP1004
LOAD SWITCH S1
END SWITCH S2
F/R SWITCH S3
S1~3: CSN1005
SWITCH P.C. BOARD
METAL SWITCH S1
PLAY SWITCH S2
S1,2: CSN1005
CONNECTOR P.C. BOARD
MOTHER P.C. BOARD
DOLBY NR P.C. BOARD
-24.5 dBs
DOLBY NR
IC302 : HA12134
-9.1 dBs
-24 dBs
Q601: DTC363TS
D601 DAP209S
Q602
-23.8dBs
Q609: 2SC2458
Q610
D621 1SS133
D623 DAP209S
D622
DOLBY NR ON/OFF
Q614 : 2SD1859
Q615 : 2SB1243
Q612 : DTC143ES
D608 1SS133
D607 HZS9R1JB2
IC601 : KHA255B
ELE VOL + MIX AMP
ELECTRONIC VOL. + MIX AMP
-8.5 dBs
AMP P.C. BOA
IC502 : μPC4570C
Q611 : 2SD1859
D606 RD4R7JSB1
D605 HZS9R1JB2
FM/AM TUNER UNIT
ANTENNA JACK
ANT
GND
Q503 : DTC144ES
Q502 : DTC144ES
Q501 : 2SC3113
IC501 : LC7218
PLL
X501
Q504 : 2SC2458
Q505 : DTC144ES
Q510 : 2SC2458
Q514 : DTC144ES
Q508 : 2SB1243
Q509 : 2SB1243
Q507 : 2SB1243
Q506 : 2SC2458
Q512 : 2SC2458
Q513 : 2SK330
D501 HZS3R0EB2
LOOP FILTER
Q511 : 2SD1859
Q515 : 2SC2458
Q516 : 2SC3113
D502 DAP209S
D504 1SS133
D505 HZS9R0JB2
Q616 : DTC144ES
Q619 : DTC144ES
Q618 : 2SC2458
IC701 : PD4190
SYSTEM CONTROL
X701
Q750 : DTA144ES
IB706 47k x 4
IB707-1 47k
IB707-2 47k x 2
IB702 100k x 6
IB703-1
IB704
IB703-2 6.8k x 2
IB701-1 82k x 4
IB701-2 100k x 2
D714 1SS133
D715~718 : 1SS133
BZ502
Q727 : DTC144ES
Q720 : DTA114ES
Q721 : DTC144ES
Q723 : 2SB1243
Q722 : DTA143ES
Q719 : 2SD1859
D711 1SS133
Q725 : DTA114ES
Q724 : DTC144ES
Q726 : DTC144ES
D725 HZS5R6JB2
Q718 : 2SB1243
Q717 : DTC144ES
IC703 : AN6540
Q740 : 2SD1859
IC702 : S-8053ANO
D723 1SS133
Q711 : DTB123ES
Q712 : DTB123ES
Q713 : DTC144ES
Q714 : DTB123ES
Q715 : DTB123ES
Q716 : DTC144ES
Q704 : 2SC2458
Q741 : 2SB124
DISPLAY UNIT
LCD : CAW1061
RPT RDM CH
CD SDK SK
MONO DISC P.SCAN C TRACK LOC SEEK
LOUD MTL
LCD DRIVER
IC901 : LC7582P
BAND/DIR S18
NR S12
ILL SHIFT S6
S17 S11 S5
FF/+ S16
REW/- S10
S4
LOC.S
SHIFT S21
LOUD S15
EJECT S9
SOURCE S3
S20 S14
MONO S8
R.INT S2
S19 S13
P.SCAN S7
BSM S1
KST7 KST6 KST5 KST4 KST3 KST2
KD3 KD2 KD1 KD0
S1~23 : CSG-255
IL1~IL13
RESET S23
IC902 : BX-1393
REMOTE CONTROLLER SENSOR


4
5
6
7
8
9
BOARD
DOLBY NR
IC302 : HA12134
-24 dBs
-9.1 dBs
IC601 : KHA255B
ELECTRONIC VOL. + MIX AMP
-8.5 dBs
-23.8dBs
DOLBY NR ON/OFF
Q614 : 2SD1859
Q612 : DTC143ES
Q601 : DTC363TS
Q602
Q609 : 2SC2458
Q610
IC602 : μPC4570C
Q611 : 2SD1859
Q618 : 2SC2458
Q750 : DTA144ES
CONTROL
AMP P.C. BOARD
POWER AMP
IC551 : TA8215L
IC552 : TA8215L
Q551 : DTC343TS
Q552
Q553 : DTC343TS
Q554
Q555 : 2SA1048
Q556 : 2SA1048
-18 dBs
+22 dBs
FL-
FL+
FR-
FR+
AUTO ANT
ILM
ACC
BACK UP
RL-
RL+
GND
RR-
RR+
PRE OUT
IC852 : μPC4570HA
IC851 : KHA157
BUFFER
ISOLATOR
Q723 : 2SB1243
Q722 : DTA143ES
Q719 : 2SD1859
Q725 : DTA114ES
Q724 : DTC144ES
Q726 : DTC144ES
Q718 : 2SB1243
Q717 : DTC144ES
IC703 : AN6540
Q740 : 2SD1859
IC702 : S-8053ANO
Q702 : 2SB945
Q701 : 2SD1859
Q703 : 2SC2458
Q704 : 2SC2458
Q705 : 2SB1243
Q706 : 2SC2458
Q707 : 2SC2458
Q741 : 2SB1243
Q742 : 2SC2458
Q711 : DTB123ES
Q712 : DTB123ES
Q713 : DTC144ES
Q714 : DTB123ES
Q715 : DTB123ES
Q716 : DTC144ES
Q727 : DTC144ES
Q721 : DTC144ES
Q720 : DTA114ES
BATTERY
Q/R SWITCH S602 CSN-078
CD-M
LCD DRIVER
IC901 : LC7582P
IC902 : BX-1393
REMOTE CONTROLLER SENSOR
S1~23 : CSG-255
4
5
6
7
8
9
A
B
C
D

SWITCHES:

●SWITCH P.C. BOARD
- S1: METAL SWITCH····················ON—OFF
- S2: PLAY SWITCH·····················ON—OFF

●CONNECTOR P.C. BOARD
- S1: LOAD SWITCH·····················ON—OFF
- S2: END SWITCH······················ON—OFF
- S3: F/R SWITCH······················ON—OFF

The underlined indicates the switch position.

Tuner Amp Unit

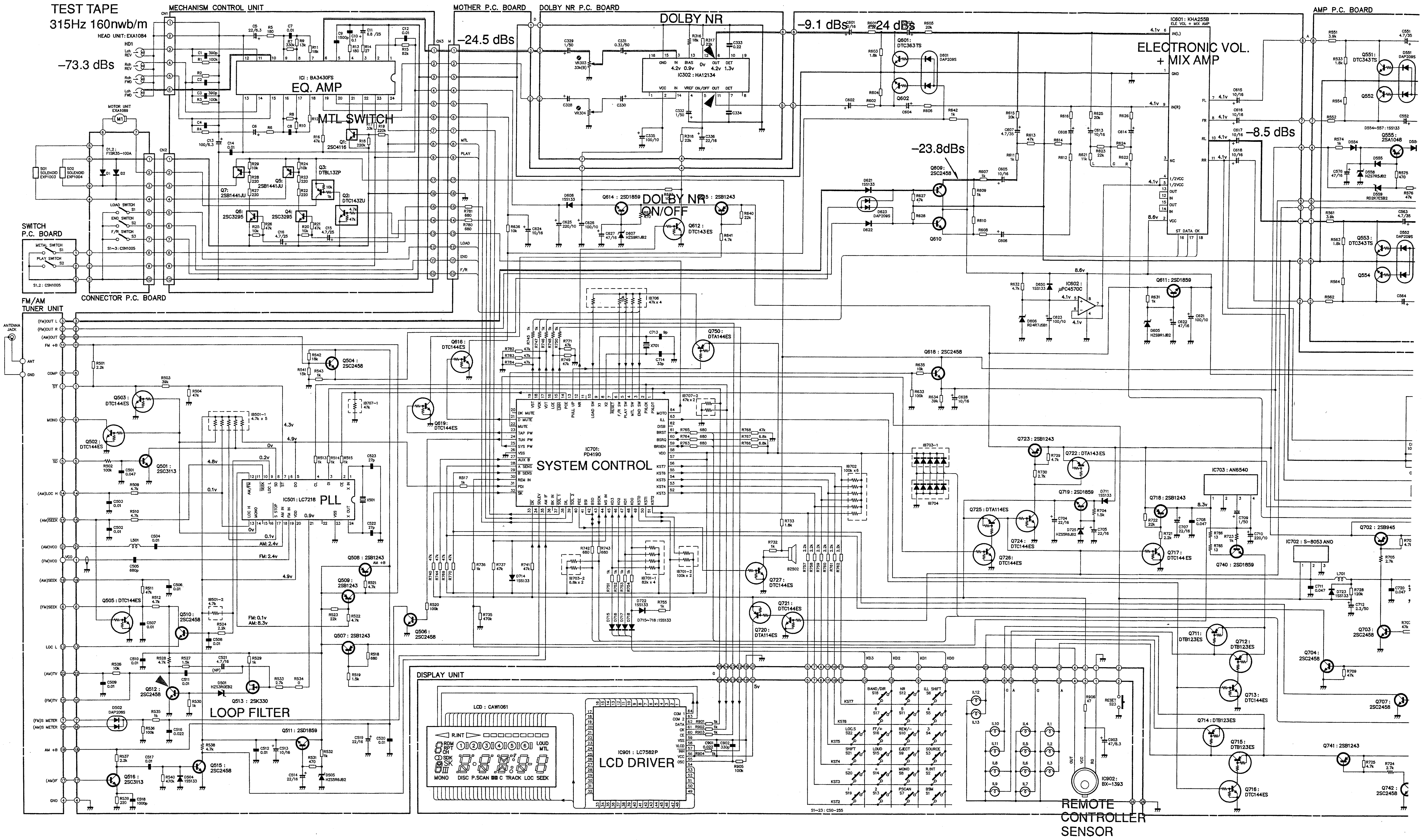
Consists of
- Mother P.C. Board
- Amp P.C. Board
- Dolby NR P.C. Board

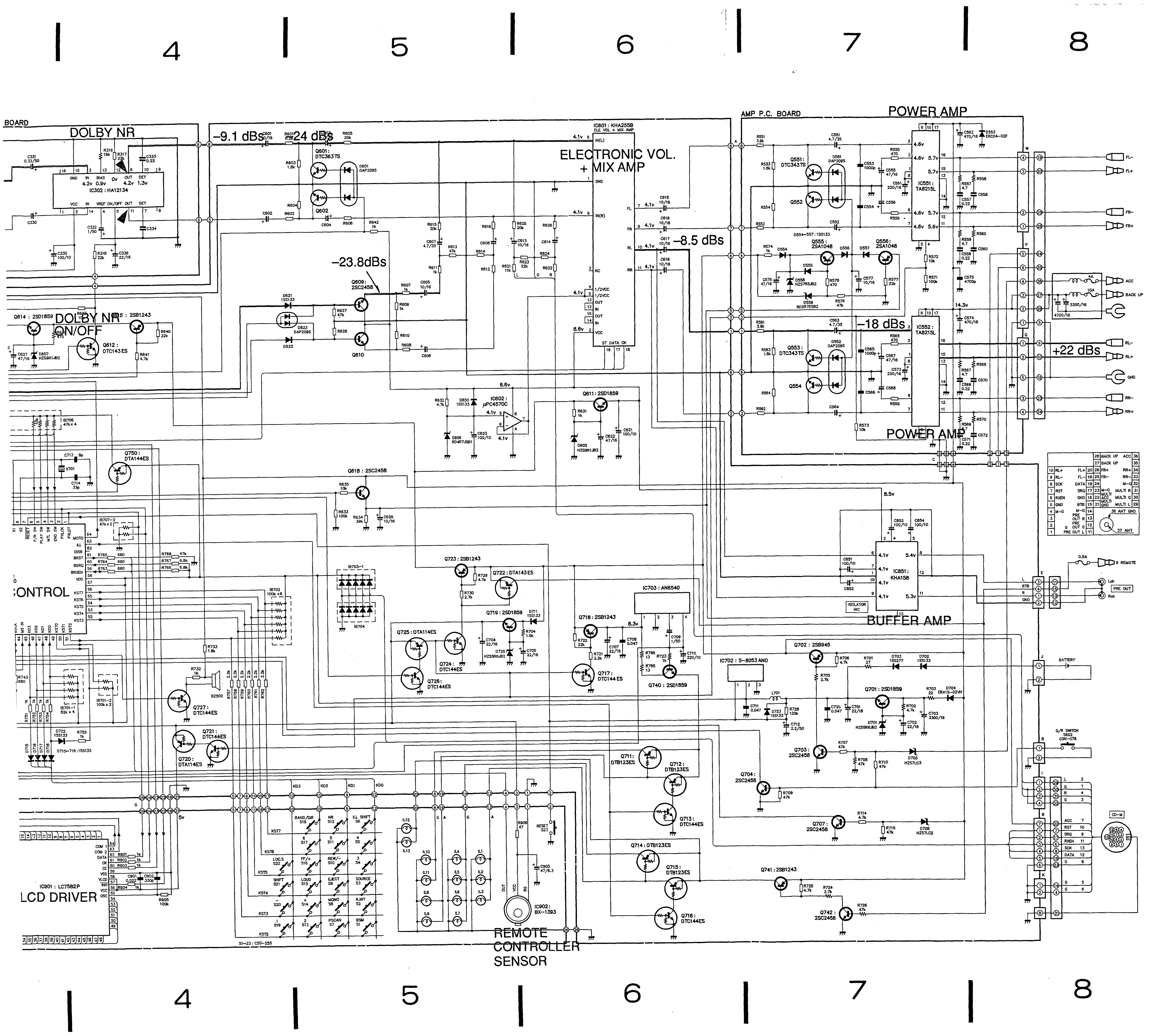
NOTE :

Indicates a chip resistor.
Indicates a chip capacitor.
Indicates a chip transistor.
Indicates a chip diode.

Fig. 13

14. SCHEMATIC CIRCUIT DIAGRAM (KEH-M5000QR/ES)


1
2
3
4
5
6
A
B
C
D
TEST TAPE
315Hz 160nwb/m
HEAD UNIT: EXA1084
–73.3 dBs
MECHANISM CONTROL UNIT
MOTHER P.C. BOARD
DOLBY NR P.C. BOARD
AMP P.C. BOARD
IC1 : BA3430FS
EQ. AMP
MTL SWITCH
–24.5 dBs
DOLBY NR
IC302 : HA12134
–9.1 dBs
24 dBs
IC601 : KHA255B
ELECTRONIC VOL. + MIX AMP
–8.5 dBs
–23.8dBs
DOLBY NR ON/OFF
SWITCH P.C. BOARD
CONNECTOR P.C. BOARD
FM/AM TUNER UNIT
ANTENNA JACK
IC602 : µPC4570C
IC701 : PD4190
SYSTEM CONTROL
IC501 : LC7218
PLL
LOOP FILTER
IC703 : AN6540
IC702 : S-8053 ANO
DISPLAY UNIT
LCD : CAW1061
IC901 : LC7582P
LCD DRIVER
IC902 : BX-1393
REMOTE CONTROLLER SENSOR


4
5
6
7
8
9
A
B
C
D
BOARD
DOLBY NR
IC302 : HA12134
-9.1 dBs
24 dBs
IC601 : KHA255B
ELE VOL + MIX AMP
ELECTRONIC VOL.
+ MIX AMP
-23.8dBs
-8.5 dBs
DOLBY NR
ON/OFF
Q614 : 2SD1859
Q615 : 2SB1243
Q612 : DTC143ES
Q609 : 2SC2458
Q610
Q601 : DTC363TS
Q602
IC602 : μPC4570C
Q611 : 2SD1859
Q618 : 2SC2458
AMP P.C. BOARD
POWER AMP
IC551 : TA8215L
IC552 : TA8215L
Q551 : DTC343TS
Q552
Q553 : DTC343TS
Q554
Q555 : 2SA1048
Q556 : 2SA1048
-18 dBs
+22 dBs
POWER AMP
IC851 : KHA156
ISOLATOR
BUFFER AMP
Q750 : DTA144ES
CONTROL
IC703 : AN6540
IC702 : S-8053ANO
Q701 : 2SD1859
Q702 : 2SB945
Q703 : 2SC2458
Q704 : 2SC2458
Q707 : 2SC2458
Q741 : 2SB1243
Q742 : 2SC2458
Q711 : DTB123ES
Q712 : DTB123ES
Q713 : DTC144ES
Q714 : DTB123ES
Q715 : DTB123ES
Q716 : DTC144ES
Q717 : DTC144ES
Q718 : 2SB1243
Q719 : 2SD1859
Q720 : DTA114ES
Q721 : DTC144ES
Q722 : DTA143ES
Q723 : 2SB1243
Q724 : DTC144ES
Q725 : DTA114ES
Q726 : DTC144ES
Q727 : DTC144ES
Q740 : 2SD1859
IC901 : LC7582P
LCD DRIVER
IC902 : BX-1393
REMOTE
CONTROLLER
SENSOR
S1~23 : CSG-255
FL-
FL+
FR-
FR+
ACC
BACK UP
RL-
RL+
GND
RR-
RR+
B REMOTE
Lch
Rch
PRE OUT
BATTERY
Q/R SWITCH S602 CSN-078
CD-M

SWITCHES:

●SWITCH P.C.BOARD

S1: METAL SWITCH····················ON—OFF

S2: PLAY SWITCH·····················ON—OFF

●CONNECTOR P.C.BOARD

S1: LOAD SWITCH·····················ON—OFF

S2: END SWITCH······················ON—OFF

S3: F/R SWITCH······················ON—OFF

The underlined indicates the switch position.

Tuner Amp Unit
Consists of ●Mother P.C.Board ●Amp P.C.Board ●Dolby NR P.C.Board

NOTE :

Indicates a chip resistor.

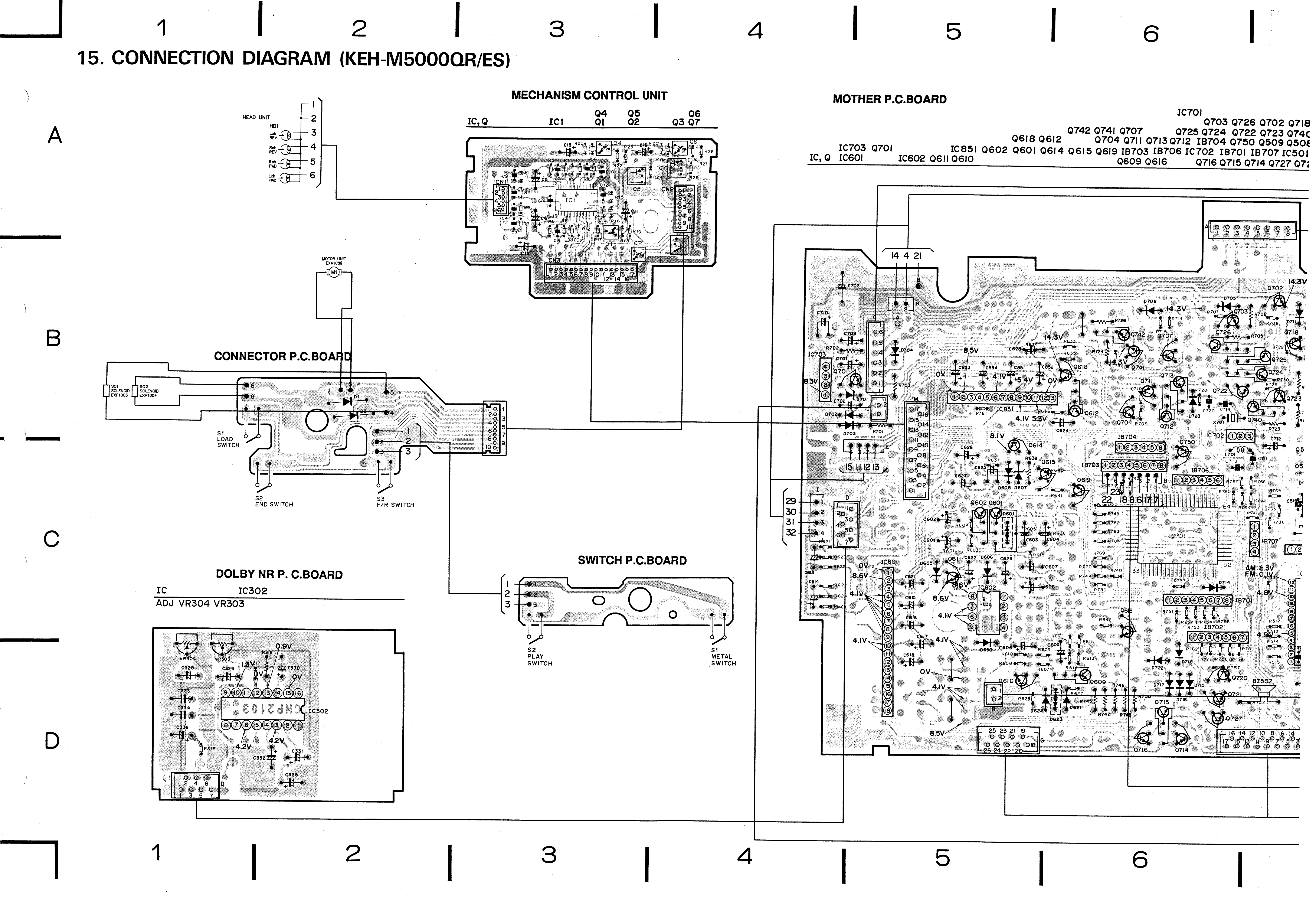
Indicates a chip capacitor.

Indicates a chip transistor.

Indicates a chip diode.

Fig. 14

15. CONNECTION DIAGRAM (KEH-M5000QR/ES)



1
2
3
4
5
6
A
B
C
D
MECHANISM CONTROL UNIT
IC, Q
IC1
Q4
Q1
Q5
Q2
Q6
Q3 Q7
CN1
CN2
CN3
HEAD UNIT
HD1
Lch REV
Rch REV
Rch FWD
Lch FWD
MOTOR UNIT
EXA1089
M1
CONNECTOR P.C.BOARD
S01 SOLENOID EXP1003
S02 SOLENOID EXP1004
S1 LOAD SWITCH
S2 END SWITCH
S3 F/R SWITCH
D1
D2
SWITCH P.C.BOARD
S2 PLAY SWITCH
S1 METAL SWITCH
DOLBY NR P. C.BOARD
IC
IC302
ADJ VR304 VR303
CNP2103
0.9V
1.3V
0V
4.2V
MOTHER P.C.BOARD
IC701
IC703 IC601
IC602
IC851
IC702
IB701
IB702
IB703
IB704
IB706
IB707
14.3V
8.5V
8.6V
8.3V
8.1V
5.4V
5.3V
4.1V
4.9V
4.8V
AM:8.3V
FM:0.1V
BZ502
X701
L701

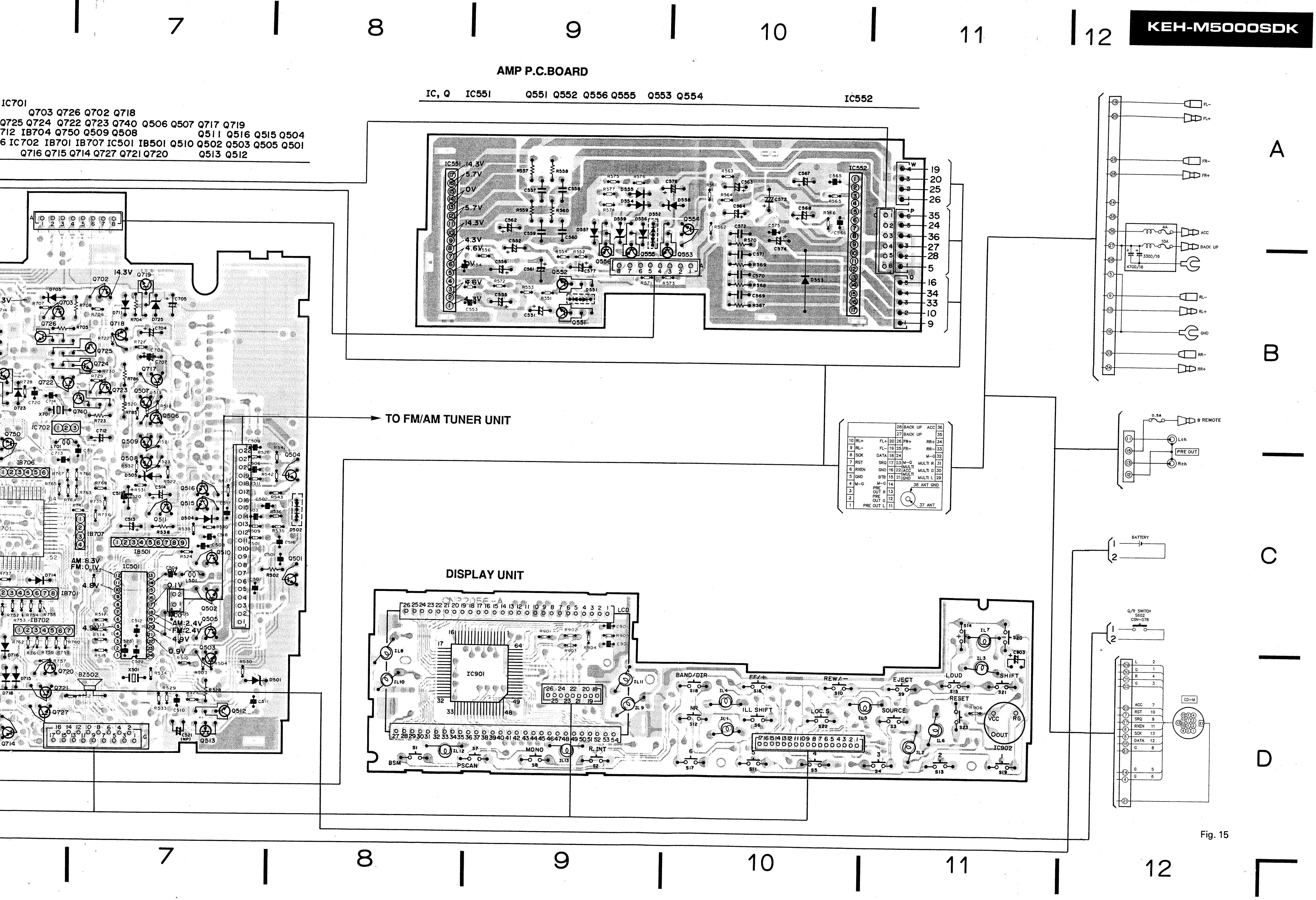
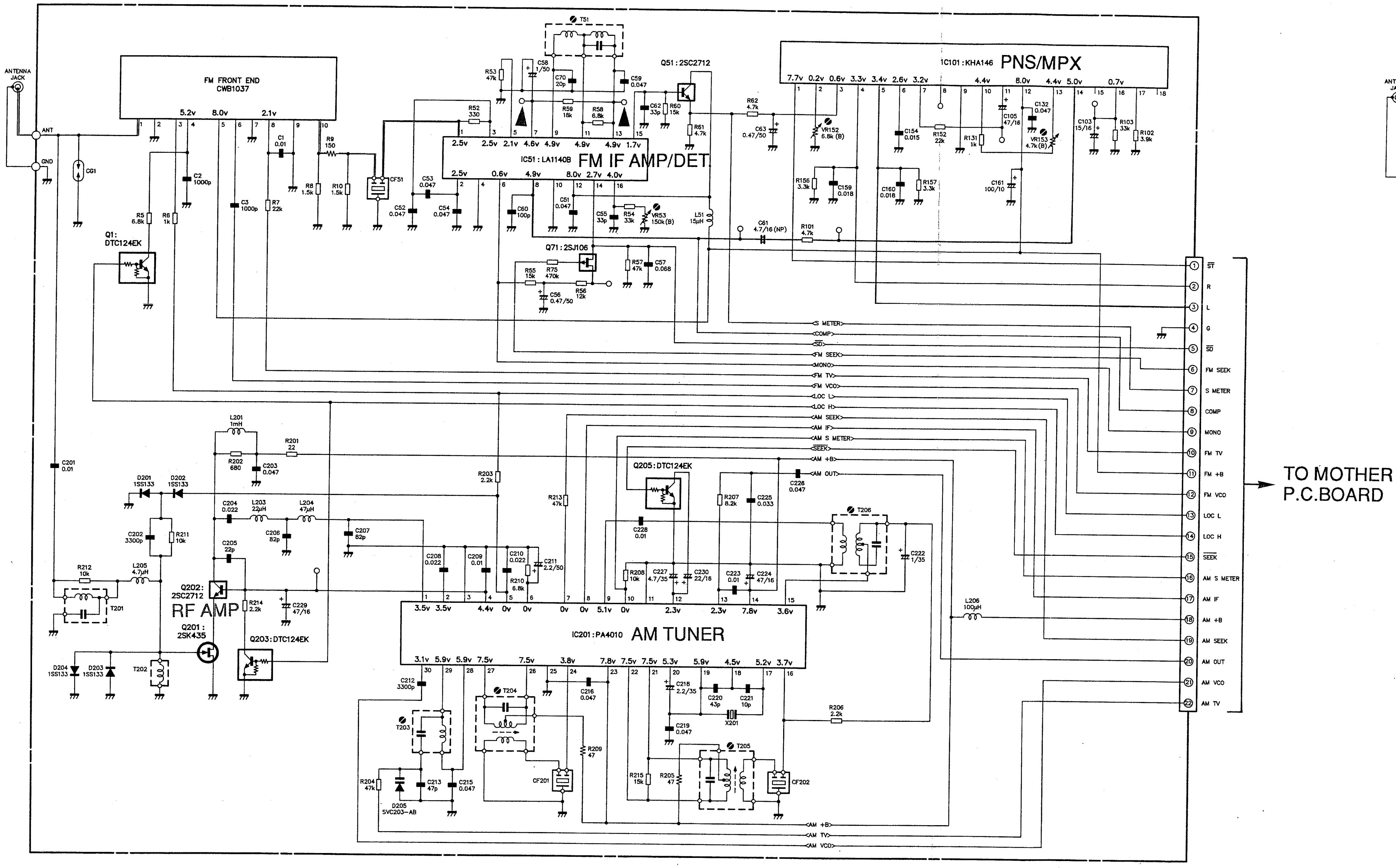

7
8
9
10
11
12
A
B
C
D
IC701
Q703 Q726 Q702 Q718
Q725 Q724 Q722 Q723 Q740 Q506 Q507 Q717 Q719
712 IB704 Q750 Q509 Q508
Q511 Q516 Q515 Q504
6 IC702 IB701 IB707 IC501 IB501 Q510 Q502 Q503 Q505 Q501
Q716 Q715 Q714 Q727 Q721 Q720
Q513 Q512
AMP P.C.BOARD
IC, Q
IC551
Q551 Q552 Q556 Q555
Q553 Q554
IC552
14.3V
5.7V
0V
5.7V
14.3V
4.3V
4.6V
0V
4.6V
4.3V
TO FM/AM TUNER UNIT
AM:8.3V
FM:0.1V
4.8V
AM:2.4V
FM:2.4V
4.9V
0.9V
0.1V
BZ502
DISPLAY UNIT
IC901
IC902
LCD
BAND/DIR
FF/+
REW/−
EJECT
LOUD
SHIFT
NR
ILL SHIFT
LOC. S
SOURCE
RESET
BSM
PSCAN
MONO
R. INT
VCC
RG
OOUT
28 BACK UP ACC 36
27 BACK UP 35
10 RL+ FL+ 20 26 FR+ RR+ 34
9 RL− FL− 19 25 FR− RR− 33
8 SCK DATA 18 24 M−G 32
7 RST SRQ 17 23 M−G MULTI R 31
6 RXEN GND 16 22 MULTI ACC MULTI G 30
5 GND BTB 15 21 MULTI GND MULTI L 29
4 M−G M−G 14
3 PRE OUT R 13
2 PRE OUT G 12
1 PRE OUT L 11
38 ANT GND
37 ANT
FL−
FL+
FR−
FR+
4A
10A
3300/16
4700/16
ACC
BACK UP
RL−
RL+
GND
RR−
RR+
0.5A
B REMOTE
Lch
PRE OUT
Rch
BATTERY
Q/R SWITCH
S602
CSN-078
L
G
R
ACC
RST
SRQ
RXEN
SCK
DATA
CD-M

Fig. 15

16. FM/AM TUNER UNIT

- KEH-M5000SDK/WG, KEH-M5000B/EW


ANTENNA JACK
ANT
GND
CG1
FM FRONT END CWB1037
Q1: DTC124EK
CF51
IC51 : LA1140B FM IF AMP/DET
T51
Q51 : 2SC2712
Q71 : 2SJ106
IC101 : KHA146 PNS/MPX
L51 15μH
C61 4.7/16 (NP)
VR152 6.8k (B)
VR153 4.7k (B)
VR53 150k (B)
S METER
COMP
SD
FM SEEK
MONO
FM TV
FM VCO
LOC L
LOC H
AM SEEK
AM IF
AM S METER
SEEK
AM +B
AM OUT
AM TV
AM VCO
① ST
② R
③ L
④ G
⑤ SD
⑥ FM SEEK
⑦ S METER
⑧ COMP
⑨ MONO
⑩ FM TV
⑪ FM +B
⑫ FM VCO
⑬ LOC L
⑭ LOC H
⑮ SEEK
⑯ AM S METER
⑰ AM IF
⑱ AM +B
⑲ AM SEEK
⑳ AM OUT
㉑ AM VCO
㉒ AM TV
TO MOTHER P.C.BOARD
L201 1mH
D201 1SS133
D202 1SS133
L203 22μH
L204 47μH
L205 4.7μH
T201
T202
Q202: 2SC2712 RF AMP
Q201 : 2SK435
Q203: DTC124EK
Q205: DTC124EK
D204 1SS133
D203 1SS133
T206
L206 100μH
IC201 : PA4010 AM TUNER
T203
T204
T205
CF201
CF202
X201
D205 SVC203-AB

- KEH-M5000QR/ES

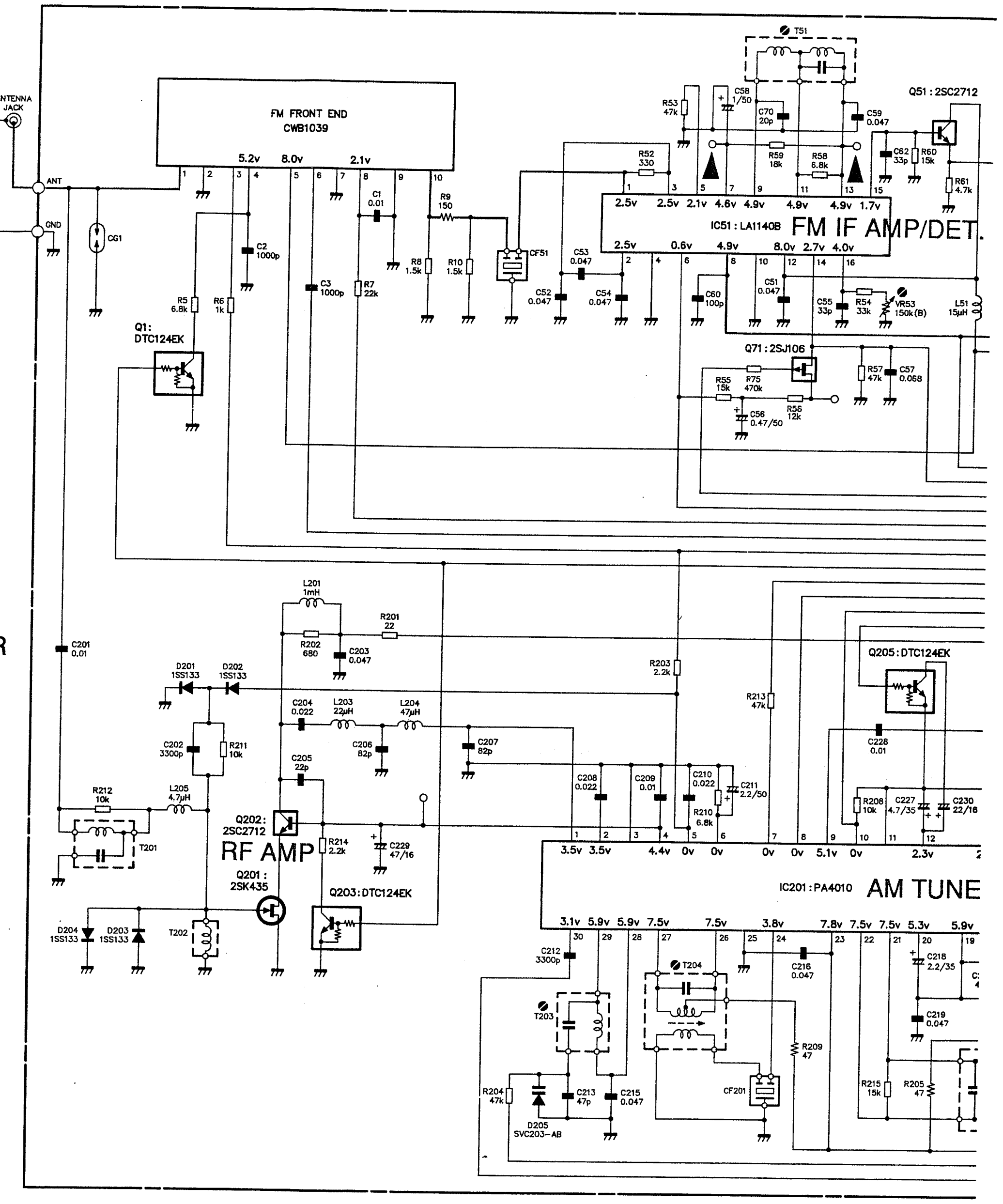

ANTENNA JACK
ANT
GND
CG1
FM FRONT END CWB1039
Q1: DTC124EK
CF51
IC51 : LA1140B FM IF AMP/DET
T51
Q51 : 2SC2712
Q71 : 2SJ106
Q205: DTC124EK
Q202: 2SC2712 RF AMP
Q201 : 2SK435
Q203: DTC124EK
IC201 : PA4010 AM TUNE
T201
T202
T203
T204
CF201
D205 SVC203-AB

Fig. 16

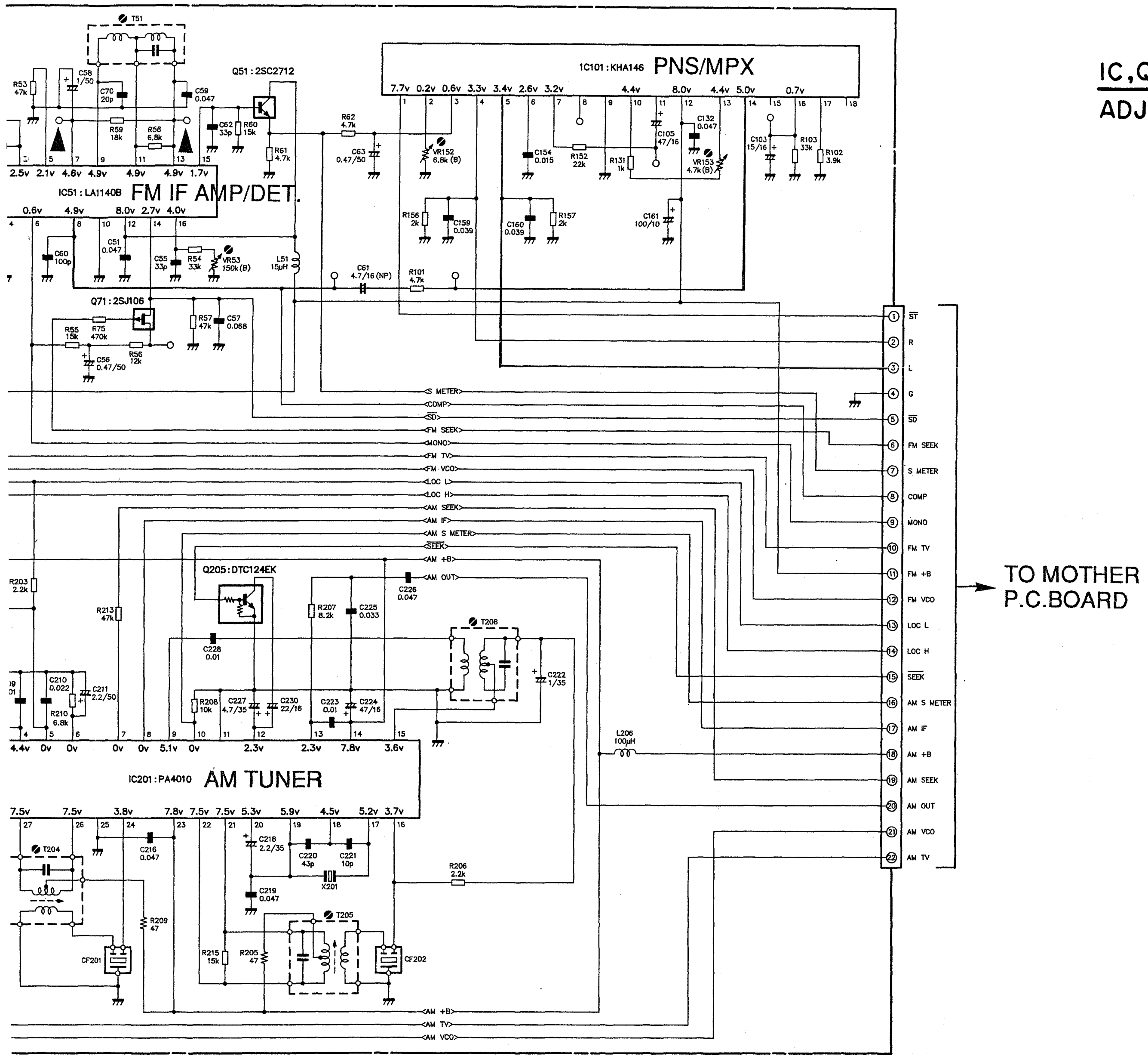

IC101 : KHA146 PNS/MPX
IC51 : LA1140B FM IF AMP/DET.
Q51 : 2SC2712
Q71 : 2SJ106
Q205 : DTC124EK
IC201 : PA4010 AM TUNER
T51
T204
T205
T206
VR152 6.8k (B)
VR153 4.7k (B)
VR53 150k (B)
L206 100μH
X201
CF201
CF202
① ST
② R
③ L
④ G
⑤ SD
⑥ FM SEEK
⑦ S METER
⑧ COMP
⑨ MONO
⑩ FM TV
⑪ FM +B
⑫ FM VCO
⑬ LOC L
⑭ LOC H
⑮ SEEK
⑯ AM S METER
⑰ AM IF
⑱ AM +B
⑲ AM SEEK
⑳ AM OUT
㉑ AM VCO
㉒ AM TV
TO MOTHER P.C.BOARD

Fig. 17

• KEH-M5000SDK/WG, KEH-M5000B/EW, KEH-M5000QR/ES

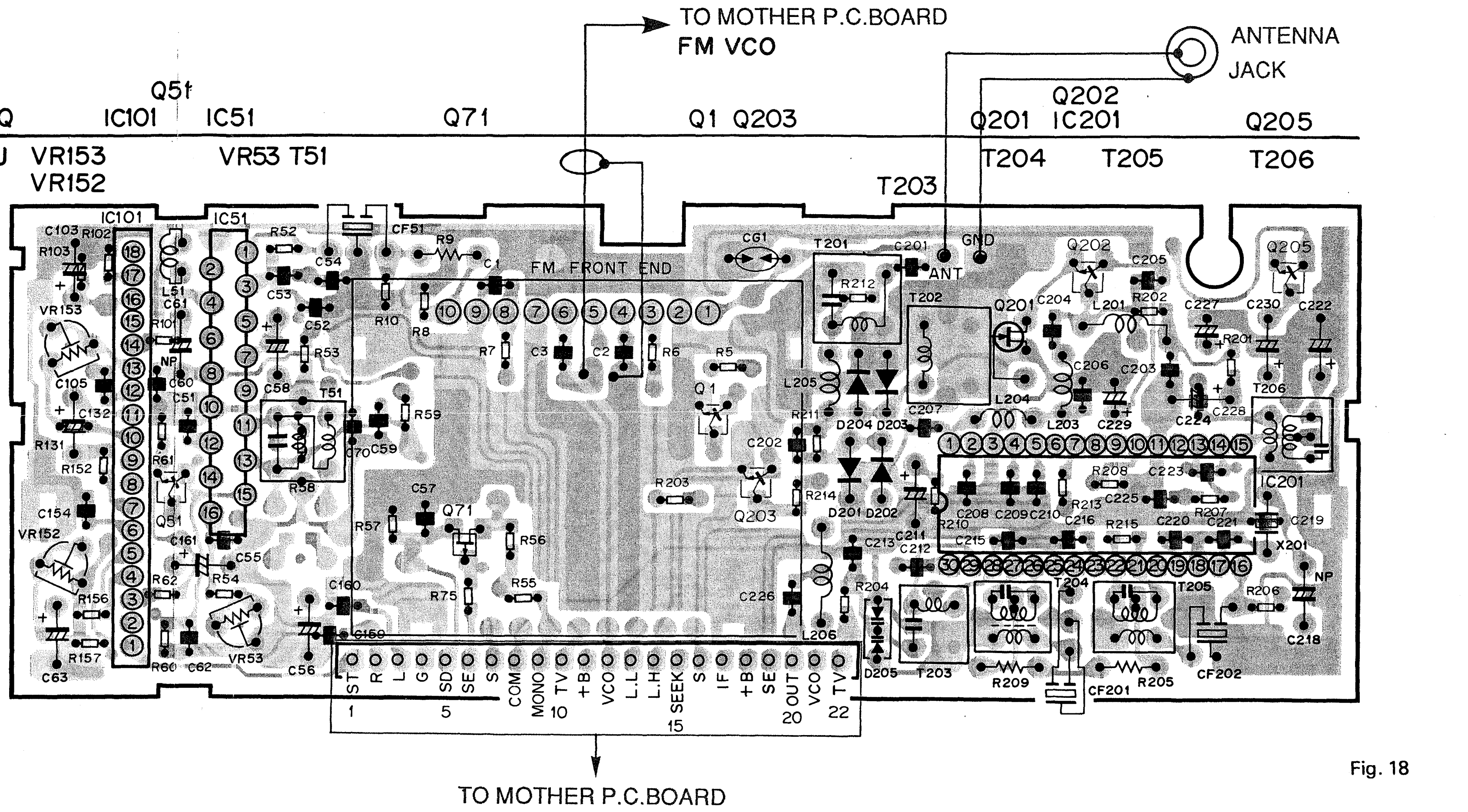

TO MOTHER P.C.BOARD
FM VCO
ANTENNA JACK
IC,Q IC101 Q51 IC51 Q71 Q1 Q203 Q201 Q202 IC201 Q205
ADJ VR153 VR152 VR53 T51 T203 T204 T205 T206
FM FRONT END
GND
ANT
ST R L G SD SE S COM MONO TV +B VCO L.L L.H SEEK S IF +B SE OUT VCO TV
1 5 10 15 20 22
TO MOTHER P.C.BOARD

Fig. 18

17. CHASSIS EXPLODED VIEW

• Parts List

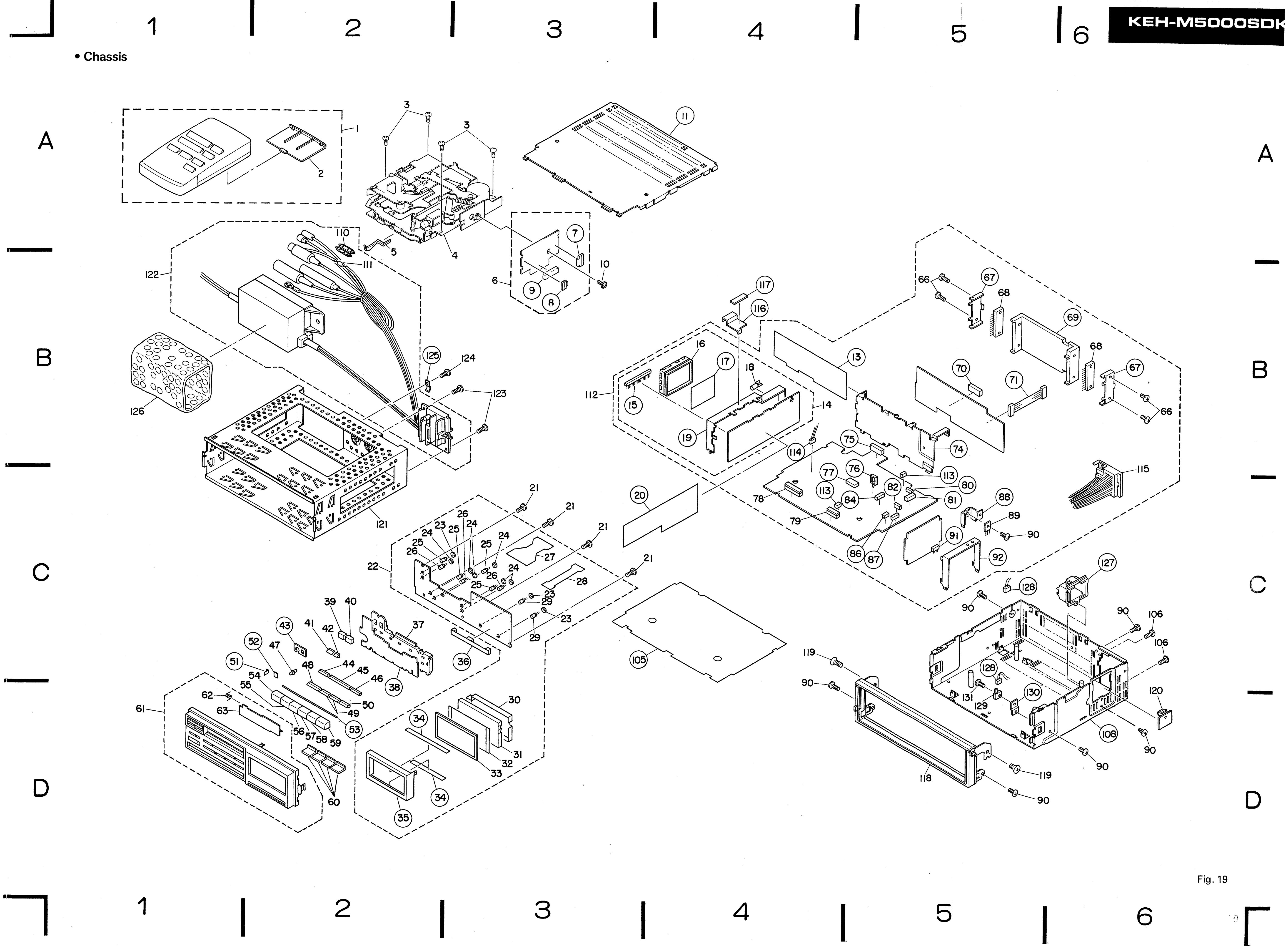
NOTE:

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.*
  ★ ★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Part No.
	1	Remote Control Assy (ES)	CXA2958
	2	Cover (ES)	CZN3224
	3	Screw	BMZ26P050FMC
◉	4	Cassette Mechanism Assy	EXK1410
	5	Arm	CNV2078
◉	6	Mechanism Control Unit	CWM1967
	7	Connector	
	8	Connector	
	9	Connector	
	10	Screw	CBA1022
	11	Case	
	12	·····	
	13	Insulator	
◉	14	FM/AM Tuner Unit (WG, EW)	CWE1146
◉		FM/AM Tuner Unit (ES)	CWE1147
	15	Plug	
	16	FM Front End (WG, EW)	CWB1037
		FM Front End (ES)	CWB1039
	17	Insulator	
	18	Antenna Jack	CKX1010
	19	Chassis	
	20	Insulator	
	21	Screw	BPZ20P060FMC
◉	22	Display Unit	CWS1145
	23	Spacer	CNM1642
	24	Bush	CNV-724
★★	25	Lamp	CEL-147
★★	26	Lamp	CEL1004
	27	P. C. Board	CNP2094
	28	P. C. Board	CNP2093
★★	29	Lamp	CEL1115
	30	Housing	CNV2046
	31	Lens	CNV2045
	32	Half Mirror	CNM2314
	33	LCD	CAW1061
	34	Insulator	
	35	Cover	
	36	Cushion	
	37	Lens	CNV2288
	38	Cushion	
★	39	Button	CAC1988
★	40	Button	CAC1987
★	41	Button	CAC1989
★	42	Button	CAC1990
	43	Spacer	
★	44	Button	CAC1831
★	45	Button	CAC1830
★	46	Button	CAC1832
★	47	Button	CAC1998
★	48	Button	CAC1833
★	49	Button	CAC1834
★	50	Button	CAC1804
	51	Stopper	
	52	Spacer	
	53	Shaft	
★	54	Button	CAC1991
★	55	Button	CAC1992
★	56	Button	CAC1993
★	57	Button	CAC1994
★	58	Button	CAC1995
★	59	Button	CAC1996
★	60	Button	CAC1997
	61	Grille Assy (WG)	CXA2939
		Grille Assy (EW)	CXA2940
		Grille Assy (ES)	CXA2941
	62	Spring	CBH1215
	63	Door	CAT1187
	64, 65	·····	
	66	Screw	BMZ30P100FMC
	67	Holder	
★★	68	IC	TA8215L
	69	Heat Sink	
	70	Connector	
	71	Connector	
	72, 73	·····	
	74	Holder	
	75	Plug	
	76	Clamper	
	77	Plug	
	78	Connector	CKS1265
	79	Connector	CKS1257
	80	Plug	
	81	Plug	
	82	Plug	
	83	·····	
	84	Connector	
	85	·····	
	86	Plug	
	87	Plug	
	88	Holder	
★★	89	IC	AN6540
	90	Screw	BMZ30P040FMC
	91	Plug	
	92	Holder	
	93—104	·····	
	105	Insulator	
	106	Screw	BMZ30P060FMC
	107	·····	
	108	Chassis Unit (WG)	
		Chassis Unit (EW)	
		Chassis Unit (ES)	
	109	·····	
	110	Cap (WG, EW)	CNS1472
	111	Resistor (WG, EW)	RS1/2P102JL
◉	112	Tuner Amp Unit (WG)	CWM1848
◉		Tuner Amp Unit (EW)	CWM1847
◉		Tuner Amp Unit (ES)	CWM1851
	113	Plug	
	114	Connector	
	115	Cord Assy (WG, EW)	CDE2303
		Cord Assy (ES)	CDE2304
	116	Holder (WG, EW)	
	117	Spacer (WG, EW)	
◉	118	Handle Assy	CXA2944
	119	Screw	CBA1109
	120	Cover	CNS1807
	121	Box	CNB1273
	122	Cord Assy (WG, EW)	CDE2300
		Cord Assy (ES)	CDE2301
	123	Screw	CBA1073
	124	Screw	BMZ30P030FMC
	125	Clamper	
	126	Air Cushioned Bag	CEG1053
	127	Holder Unit	
	128	Connector	
★★	129	Switch	CSN-078
	130	Holder	
	131	Screw	CBA-172

A
B
C
D

• Chassis


1
2
3
4
5
6
A
B
C
D
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11
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Fig. 19

18. CASSETTE MECHANISM ASSY EXPLODED VIEW

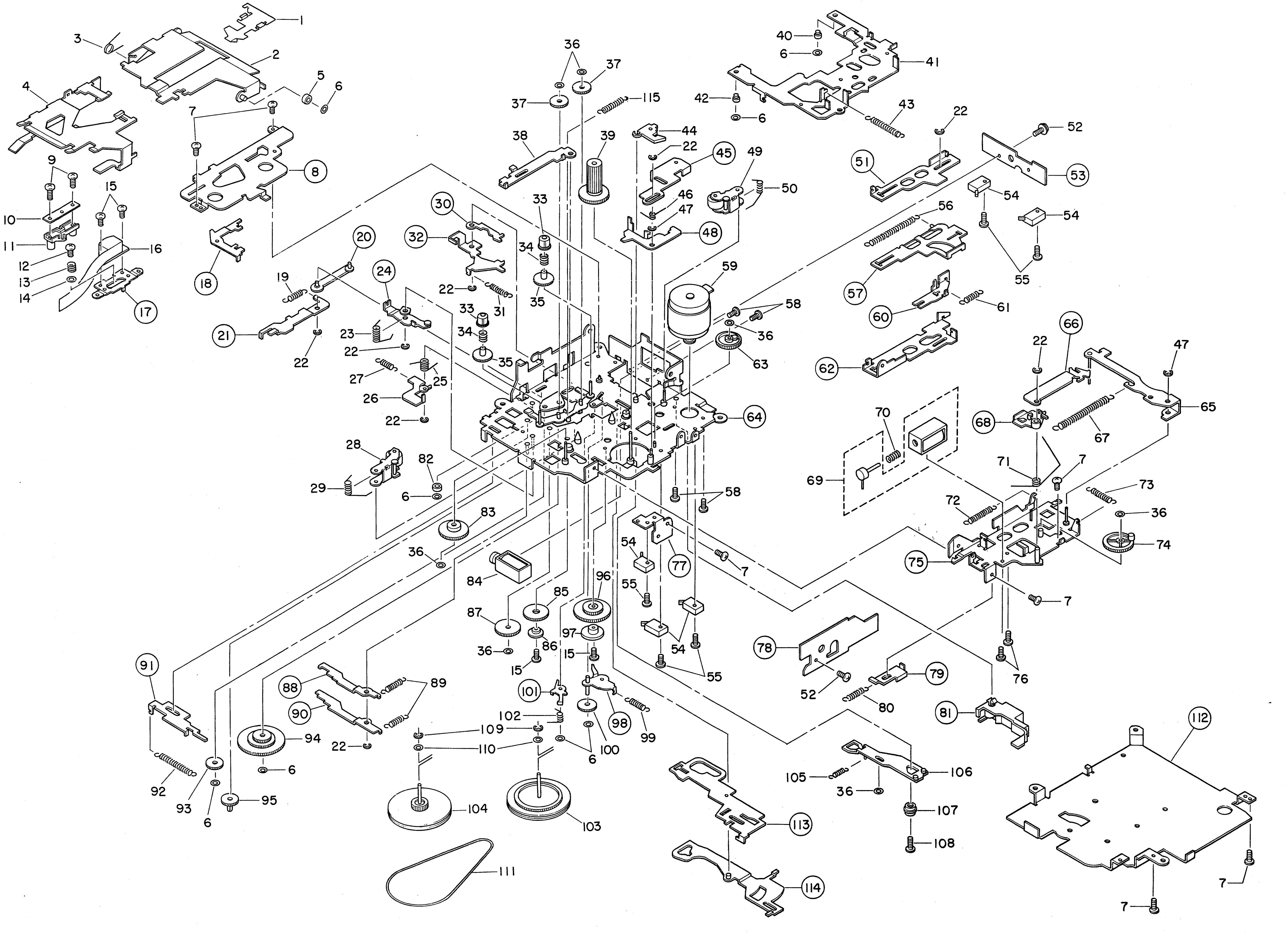
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Fig. 20

- Parts List

Mark	No.	D
	1	L
	2	A
	3	S
	4	C
	5	R
	6	W
	7	S
	8	C
	9	S
	10	S
	11	S
	12	S
	13	S
	14	W
	15	S
★★	16	H
	17	A
	18	A
	19	S
	20	L
	21	A
	22	W
	23	S
	24	A
	25	S
	26	A
	27	S
★★	28	P
	29	S
	30	A
	31	S
	32	A
	33	C
	34	S
★★	35	G
	36	W
	37	G
	38	L
	39	G
	40	R

• **Parts List**

Mark	No.	Description	Part No.
	1	Lever	ENV1124
	2	Arm Unit	EXA1081
	3	Spring	EBH1152
	4	Cassette Holder	ENC1165
	5	Roller	ELA1148
	6	Washer	CBF1037
	7	Screw	BMZ20P030FMC
	8	Cover	
	9	Screw	EBA1016
	10	Spring	EBL1011
	11	Spacer	ENV1105
	12	Screw	BMZ20P025FMC
	13	Spring	EBH1145
	14	Washer	EBE1005
	15	Screw	HBA-175
★★	16	Head Unit	EXA1084
	17	Arm	
	18	Arm	
	19	Spring	EBH1143
	20	Lever Unit	
	21	Arm	
	22	Washer	YE15FUC
	23	Spring	EBH1154
	24	Arm Unit	
	25	Spring	EBH1138
	26	Arm	ENV1122
	27	Spring	EBH1142
★★	28	Pinch Roller Unit	EXA1073
	29	Spring	EBH1134
	30	Arm	
	31	Spring	EBH1144
	32	Arm	
	33	Collar	ENV1117
	34	Spring	EBH1155
★★	35	Gear	ENV1116
	36	Washer	CBF1038
	37	Gear	ENV1115
	38	Lever Unit	EXA1074
	39	Gear	ENV1107
	40	Roller	ELA1146
	41	Head Base Unit	EXA1071
	42	Roller	ELA1147
	43	Spring	EBH1131
	44	Arm	ENV1121
	45	Lever Unit	
	46	Spring	EBH1153
	47	Washer	YE20FUC
	48	Arm	
★★	49	Pinch Roller Unit	EXA1072
	50	Spring	EBH1133
	51	Lever	
	52	Screw	CBA1076
	53	P.C.Board	
★★	54	Switch	CSN1005
	55	Screw	CBA1070
	56	Spring	EBH1147
	57	Lever	
	58	Screw	PMS20P025FMC
★★	59	Motor Unit	EXA1089
	60	Lever	
	61	Spring	EBH1149
	62	Lever	
	63	Gear	ENV1106
	64	Chassis Unit	
	65	Arm Unit	EXA1082
	66	Arm	
	67	Spring	EBH1146
	68	Clamper	
★	69	Solenoid	EXP1004
	70	Spring	EBH1157
	71	Spring	EBH1151
	72	Spring	EBH1148
	73	Spring	EBH1135
	74	Gear	ENV1118
	75	Guide Unit	
	76	Screw	PMS20P022FUC
	77	Bracket	
	78	P.C.Board	
	79	Arm	
	80	Spring	EBH1158
	81	Clamper	
	82	Roller	ELA1149
	83	Gear	ENV1111
★	84	Solenoid	EXP1003
	85	Gear	ENV1109
	86	Collar	ELA1152
	87	Gear	ENV1110
	88	Arm	
	89	Spring	EBH1136
	90	Arm	
	91	Lever	
	92	Spring	EBH1137
	93	Gear	ENV1112
	94	Gear Unit	EXA1083
	95	Gear	ENV1113
	96	Gear	ENV1108
	97	Collar	ELA1151
	98	Arm Unit	
	99	Spring	EBH1141
	100	Gear	ENV1114
	101	Arm	
	102	Spring	EBH1140
	103	Flywheel	ENV1127
	104	Flywheel	ENV1128
	105	Spring	EBH1159
	106	Arm	ENV1119
	107	Collar	ELA1150
	108	Screw	HBA-183
	109	E Type Washer	CBG1003
	110	Washer	HBF-179
★★	111	Belt	ENT1011
	112	Cover	
	113	Lever	
	114	Arm Unit	
	115	Spring	EBH1139

19. ELECTRICAL PARTS LIST

NOTE:

- *For your parts Stock Control, the fast moving items are indicated with the marks ** and *.*
  *** : GENERALLY MOVES FASTER THAN *.*
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*
  Chip Resistor
  RS1/8S□□□J, RS1/10S□□□J
  Chip Capacitor (except for CQS.....)
  CKS....., CCS....., CSZS.....

Tuner Amp Unit

Consists of
- Mother P.C.Board
- Amp P.C.Board
- Dolby NR P.C.Board

Unit Number :
Unit Name : Tuner Amp Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
**	IC 302		HA12134
**	IC 501		LC7218
**	IC 551 552		TA8215L
**	IC 601		KHA255B
**	IC 602		μPC4570C
**	IC 701		PD4190
**	IC 702		S-8053ANO
**	IC 703		AN6540
**	IC 802 (KEH-M5000SDK)		KHA142
**	IC 851 (KEH-M5000SDK, KEH-M5000B)		KHA157
**	IC 851 (KEH-M5000QR)		KHA158
**	IC 852 (KEH-M5000SDK, KEH-M5000B)		μPC4570HA
**	Q 501 516		2SC3113
**	Q 502 (KEH-M5000B, KEH-M5000QR)		DTC144ES
**	Q 503 505 616 619 713 716 717 721 724		DTC144ES
**	Q 504 506 510 512 515 609 610 618 703		2SC2458
**	Q 507 508 509 615 718 723 741		2SB1243
**	Q 511 611 614 701 719 740		2SD1859
**	Q 513		2SK330
**	Q 514 (KEH-M5000SDK, KEH-M5000B)		DTC144ES
**	Q 551 552 553 554		DTC343TS
**	Q 555 556		2SA1048
**	Q 601 602		DTC363TS
**	Q 603 (KEH-M5000SDK) 604 (KEH-M5000SDK)		DTC363TS
**	Q 605 (KEH-M5000SDK) 606 (KEH-M5000SDK)		DTC363TS
**	Q 612		DTC143ES
**	Q 617 (KEH-M5000SDK)		2SC2458
**	Q 702		2SB945
**	Q 704 707 742		2SC2458
**	Q 705 (KEH-M5000SDK, KEH-M5000B)		2SB1243
**	Q 706 (KEH-M5000SDK, KEH-M5000B)		2SC2458
**	Q 711 712 714 715		DTB123ES
**	Q 720 725		DTA114ES
**	Q 722		DTA143ES
**	Q 726 727		DTC144ES
**	Q 750		DTA144ES
**	Q 801 (KEH-M5000SDK)		2SD1859
**	Q 802 (KEH-M5000SDK)		2SC2458
*	D 501		HZS3R0EB2
*	D 502 551 552 601 623		DAP209S
*	D 504 554 555 556 557 608 621 622 650 702		1SS133
*	D 505 701 725		HZS5R6JB2
*	D 553		ERC04-02F
*	D 558		HZS7R5JB2
*	D 559		RD2R7ESB2
*	D 602 (KEH-M5000SDK) 603 (KEH-M5000SDK)		DAP209S
*	D 605 607		HZS9R1JB2
*	D 606		RD4R7JSB1
*	D 703		1SS277
*	D 704		ERA15-02VH
*	D 705		HZS7LC3
*	D 706 (KEH-M5000SDK, KEH-M5000B)		ERA15-02VH
*	D 707 (KEH-M5000SDK, KEH-M5000B)		ERA15-02VH
*	D 708		HZS7LC2
*	D 710 (KEH-M5000SDK, KEH-M5000B)		HZS6R8JB1
*	D 711 714 715 716 717 718 723		1SS133
*	D 720 (KEH-M5000SDK)		1SS133
*	D 722 (KEH-M5000QR)		1SS133
	L 501	Ferri-Inductor	LAU2R2M
	L 502 (KEH-M5000SDK, KEH-M5000B)	Ferri-Inductor	LAUR22M

Mark	Circuit Symbol & No.	Part Name	Part No.
	L 701	Ferri-Inductor	LAU101K
	IB 501		CWW1272
	IB 701		CWW1273
	IB 702		CWW1274
	IB 703		CWW1277
	IB 704		CWW1128
	IB 706		CWW1276
	IB 707		CWW1049
	X 501	Crystal Resonator	CSS1030
	X 701	Crystal Resonator	CSS1023
	X 801(KEH-M5000SDK)	Ceramic Resonator	CSS1019
**	VR 303 304	Semi-fixed 33kΩ(B)	CCP-381
	BZ 502	Buzzer	CPV1006
		FM/AM Tuner Unit(KEH-M5000SDK, KEH-M5000B)	
		FM/AM Tuner Unit(KEH-M5000QR)	

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 316		RD1/4PS183JL
	R 317 318 523 577 623 624		RS1/10S223J
	R 501 524 537 721 757 758 759 760		RS1/10S222J
	R 502		RD1/4PS104JL
	R 503 634		RS1/10S393J
	R 504 511 576 613 614 627 628		RS1/10S473J
	R 509 510 512 521 522 632		RS1/10S472J
	R 513 514 515 517 529 530 532 535 543		RS1/10S102J
	R 518		RS1/10S681J
	R 519 527		RS1/10S152J
	R 520 536 571 633		RS1/10S104J
	R 526 572 573 635 636 637		RS1/10S103J
	R 528 538 702		RD1/4PS472JL
	R 531 555 556 565 566 575		RS1/10S471J
	R 533(KEH-M5000SDK, KEH-M5000B)		RS1/10S222J
	R 533(KEH-M5000QR)		RS1/10S272J
	R 534(KEH-M5000SDK, KEH-M5000B)		RS1/10S222J
	R 534(KEH-M5000QR)		RS1/10S0R0J
	R 539		RS1/10S221J
	R 540 735		RS1/10S474J
	R 541		RS1/10S153J
	R 542		RS1/10S183J
	R 551 552 561 562		RS1/10S392J
	R 553 554 563 564		RS1/10S182J
	R 557 558 559 560 567 568 569 570		RD1/4PS4R7JL
	R 574 607 608 609 610 611 612		RS1/10S102J
	R 601 602		RS1/10S822J
	R 603 604 733		RS1/10S182J
	R 605 606 615 616 625 626		RS1/10S203J
	R 621 622		RS1/10S113J
	R 631 642 732 736 751 752 753		RS1/10S102J
	R 639		RD1/4PS471JL
	R 640 722		RS1/10S223J
	R 641 706 714 725 729		RS1/10S472J
	R 643(KEH-M5000SDK)		RS1/10S473J
	R 644(KEH-M5000SDK)		RS1/10S223J
	R 701		RD1/4PS270JL
	R 703		RD1/4PS220JL
	R 704		RD1/4PS152JL
	R 705 724		RD1/4PS272JL
	R 707 709 710 715 737 740 741 744 749		RS1/10S473J
	R 708 726		RD1/4PS473JL
	R 711(KEH-M5000SDK, KEH-M5000B)		RS1/10S103J
	R 712(KEH-M5000SDK, KEH-M5000B)		RS1/10S102J
	R 713(KEH-M5000SDK, KEH-M5000B)		RD1/4PS104JL
	R 723 745 746 747 748 750		RD1/4PS102JL
	R 727(KEH-M5000SDK, KEH-M5000B)		RS1/10S473J
	R 728		RS1/10S124J
	R 730		RS1/10S272J
	R 742 743 763 764 765 780 781		RS1/10S681J
	R 754		RS1/10S102J
	R 755(KEH-M5000SDK, KEH-M5000QR)		RS1/10S102J
	R 761 762		RS1/10S222J
	R 766 767		RS1/10S682J
	R 768 769 770 771 782 783 784		RS1/10S473J
	R 785 786		RD1/4PS130JL
	R 801(KEH-M5000SDK)		RD1/4PS102JL
	R 802(KEH-M5000SDK)		RS1/10S103J
	R 803(KEH-M5000SDK)		RS1/10S472J
	R 804(KEH-M5000SDK)		RS1/10S473J
	R 805(KEH-M5000SDK)		RS1/10S222J
	R 807(KEH-M5000SDK)		RS1/10S471J
	R 860(KEH-M5000SDK, KEH-M5000B)		RS1/10S392J
	R 861(KEH-M5000SDK, KEH-M5000B)		RS1/10S182J
	R 862(KEH-M5000SDK, KEH-M5000B)		RS1/10S392J
	R 863(KEH-M5000SDK, KEH-M5000B)		RS1/10S182J
	R 864(KEH-M5000SDK, KEH-M5000B)		RS1/10S474J
	R 865(KEH-M5000SDK, KEH-M5000B)		RS1/10S474J
	R 881(KEH-M5000SDK, KEH-M5000B)		RS1/10S102J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 328 329 332		CEA010M50LS2
	C 330 331		CEAR33M50LS2
	C 333 334		CQEA224J63
	C 335 623 626 851 852 853 854		CEA101M10LS
	C 336 514 519 704 705 707		CEA220M16LS
	C 501 708 711 720		CKSQYF473Z25
	C 502 503 504 506 507 508 509 510 511 512		CKSQYB103K50
	C 505		CKSQYB681K50
	C 513 601 602 605 606 613 614 624 628		CEA100M16LS2
	C 515(KEH-M5000SDK, KEH-M5000B)		CEAR47M50LS2
	C 516		CKSQYB223K25
	C 517 520		CKSQYB103K50
	C 518 553 554 565 566		CKSQYB102K50
	C 521	4.7μF/16V	CCH1005
	C 522 523		CCSQCH270J50
	C 551 552 563 564		CEHAS4R7M35
	C 555 556 567 568 576		CEHAS470M16
	C 557 558 559 560 569 570 571 572		CQEA224J63
	C 561 573	220μF/16V	CCH1063
	C 562 574		CEHAQ471M16
	C 575		CKSQYB472K50
	C 577		CEHAS100M16
	C 580(KEH-M5000SDK, KEH-M5000B)		CKSQYB103K50
	C 581(KEH-M5000SDK, KEH-M5000B)		CKSQYB103K50
	C 603 604 607 608		CEA4R7M35LS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 615 616 617 618		CEA100M16LS2
	C 621		CEA101M10L2
	C 622 627		CEA470M16LS
	C 625		CEA221M10L2
	C 701 702		CEA220M16L2
	C 703	3300µF/16V	CCH1037
	C 706 (KEH-M5000SDK, KEH-M5000B)		CKSQYF473Z25
	C 709		CEA010M50L2
	C 710	220µF/10V	CCH1015
	C 712		CEA2R2M50LS2
	C 713		CCSQCH090D50
	C 714		CCSQCH330J50
	C 801 (KEH-M5000SDK) 802 (KEH-M5000SDK)		CEA220M16LS
	C 803 (KEH-M5000SDK)		CKSQYB103K50
	C 804 (KEH-M5000SDK)		CEAR33M50LS2
	C 805 (KEH-M5000SDK)		CEA470M16LS
	C 806 (KEH-M5000SDK)		CEA4R7M35LS
	C 807 (KEH-M5000SDK)		CQEA683J50
	C 865 (KEH-M5000SDK, KEH-M5000B)		CEA100M16LS2
	C 866 (KEH-M5000SDK, KEH-M5000B)		CEA010M50LS2
	C 867 (KEH-M5000SDK, KEH-M5000B)		CEA100M16LS2
	C 868 (KEH-M5000SDK, KEH-M5000B)		CEA010M50LS2

Unit Number :
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
**	IC 51		LA1140B
**	IC 101		KHA146
**	IC 201		PA4010
**	Q 1 203 205	Chip Transistor	DTC124EK
**	Q 51 202	Chip Transistor	2SC2712
**	Q 71	Chip Transistor	2SJ106
**	Q 201		2SK435
*	D 201 202 203 204		1SS133
*	D 205	Variable Capacitance Diode	SVC203-AB
	L 51	Inductor	LAU150K
	L 201 (KEH-M5000SDK, KEH-M5000B)	Inductor	CTF1084
	L 201 (KEH-M5000QR)	Ferri-Inductor	CTF1026
	L 203	Ferri-Inductor	LAU220K
	L 204	Ferri-Inductor	LAU470K
	L 205	Ferri-Inductor	LAU4R7K
	L 206	Ferri-Inductor	CTF-157
	T 51	Coil	CTC1029
	T 201	Coil	CTB1020
	T 202	Coil	CTB1004
	T 203	Coil	CTB1040
	T 204	Coil	CTE1025
	T 205	Coil	CTE1026
	T 206	Coil	CTE1027
	CG 1	Surge Protector	DSP-201M-S00B
	CF 51	Ceramic Filter	CTF-182
	CF 201	Ceramic Filter	CTF1041 (CTF1027)
	CF 202	Filter	CTF1085 (CTF-100)
	X 201	Crystal Resonator	CSS1014
**	VR 53	Semi-fixed 150kΩ (B)	VRTB4VS154
**	VR 152	Semi-fixed 6.8kΩ (B)	VRTB4VS682
**	VR 153	Semi-fixed 4.7kΩ (B)	VRTB4VS472
		FM Front End (KEH-M5000SDK, KEH-M5000B)	CWB1037
		FM Front End (KEH-M5000QR)	CWB1039

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 5 58 210		RS1/10S682J
	R 6 131		RS1/10S102J
	R 7 152		RS1/10S223J
	R 8 10		RS1/10S152J
	R 9		RD1/4PS151JL
	R 52		RS1/10S331J
	R 53 57 204 213		RS1/10S473J
	R 54 103		RS1/10S333J
	R 55 60 215		RS1/10S153J
	R 56		RS1/10S123J
	R 59		RS1/10S183J
	R 61 62 101		RS1/10S472J
	R 75		RS1/10S474J
	R 102		RS1/10S392J
	R 156 (KEH-M5000SDK, KEH-M5000B)		RS1/10S332J
	R 156 (KEH-M5000QR) 157 (KEH-M5000QR)		RS1/10S202J
	R 157 (KEH-M5000SDK, KEH-M5000B)		RS1/10S332J
	R 201		RS1/10S220J
	R 202		RS1/10S681J
	R 203 206 214		RS1/10S222J
	R 205 209		RD1/4PS470JL
	R 207		RS1/10S822J
	R 208 211 212		RS1/10S103J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 1 201 209 223 228		CKSQYB103K25
	C 2 3		CKSQYB102K50
	C 51 52 53 54 59 132 203 215 216 219		CKSQYF473Z50
	C 55 62		CCSQSL330J50
	C 56 63		CEAR47M50LS2
	C 57		CKSYB683K25
	C 58		CEA010M50LS2
	C 60		CCSQSL101J50
	C 61		CEA4R7M16NPL
	C 70		CCSQCH200J50
	C 103		CEA150M16LS
	C 105 224		CEA470M16LS
	C 154		CKSQYB153K25
	C 159 (KEH-M5000SDK, KEH-M5000B)		CKSQYB183K25
	C 159 (KEH-M5000QR) 160 (KEH-M5000QR)		CKSQYB393K25
	C 160 (KEH-M5000SDK, KEH-M5000B)		CKSQYB183K25
	C 161		CEA101M10LS
	C 202 212		CKSQYB332K50
	C 204 208 210		CKSQYB223K25
	C 205		CCSQCH220J50

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 206 207		CCSQCH820J50
	C 211		CEA2R2M50LS2
	C 213		CCSQCH470J50
	C 218		CEA2R2M35NPLL
	C 220		CCSQCH430J50
	C 221		CCSQCH100D50
	C 222		CSZA010K35L
	C 225		CKSQYB333K25
	C 226		CKSQYF473Z50
	C 227		CEA4R7M35LS
	C 229		CEA470M16LS
	C 230		CEA220M16LS

Unit Number :
Unit Name : Mechanism Control Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
**	IC 1		BA3430FS
**	Q 1	Chip Transistor	2SC4116
**	Q 2	Chip Transistor	DTC143ZU
**	Q 3	Chip Transistor	DTBL13ZP
**	Q 4 6	Chip Transistor	2SC3295
**	Q 5 7	Chip Transistor	2SB1441JU

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	R 1 2 3 4		RS1/10S104J
	R 5 6 13		RS1/10S181J
	R 7 8		RS1/10S334J
	R 9 10		RS1/10S133J
	R 11 12		RS1/10S183J
	R 14		RS1/10S270J
	R 15		RS1/10S823J
	R 16 21 26		RS1/10S473J
	R 17		RS1/10S333J
	R 18 19		RS1/10S224J
	R 20 24 25 29		RS1/10S103J
	R 22 23 27 28		RS1/8S221J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
	C 1 2 3 4		CKSQYB391K50
	C 5 6	22μF/6.3V	CCH1065
	C 7 8 14		CKSQYB103K50
	C 9		CKSQYB152K50
	C 10 12		CKSYB104K25
	C 11	6.8μF/25V	CCH1066
	C 13	100μF/6.3V	CCH1067
	C 15 16	4.7μF/25V	CCH1064

Unit Number :
Unit Name : Display Unit

Mark	Circuit Symbol & No.	Part Name	Part No.
**	IC 901		LC7582P
**	IC 902		BX-1393
**	S 1 2 3 4 5 6 7 8 9 10	Switch	CSG-255
**	S 11 12 13 14 15 16 17 18 19 20	Switch	CSG-255
**	S 21 22 23	Switch	CSG-255
**	IL 1 2 3	Lamp 14V 40mA	CEL1004
**	IL 4 5 6 7	Lamp 14V 40mA	CEL-147
**	IL 8 9	Lamp 8V 60mA	CEL1117
**	IL 10 11	Lamp 8V 60mA	CEL1116
**	IL 12 13	Lamp 8V 60mA	CEL1115
		LCD	CAW1061
	R 901 902 903 904		RS1/10S102J
	R 905		RS1/10S104J
	R 906		RS1/10S470J
	C 901		CKSQYB223K25
	C 902		CCSQCH331J50
	C 903		CEA470M6R3LS

Unit Number :
Unit Name : Connector P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
*	D 1 2		F1SR35-100A
**	S 1 2 3	Switch(LOAD.END.F/R)	CSN1005

Unit Number :
Unit Name : Switch P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
**	S 1 2	Switch(METAL.PLAY)	CSN1005

Miscellaneous Parts List

Mark	Circuit Symbol & No.	Part Name	Part No.
**	S 602	Switch(Q/R)	CSN-078
**	HD 1	Head Unit	EXA1084
**	M 1	Motor Unit	EXA1089
*	SO 1	Solenoid	EXP1003
*	SO 2	Solenoid	EXP1004

20. PACKING METHOD

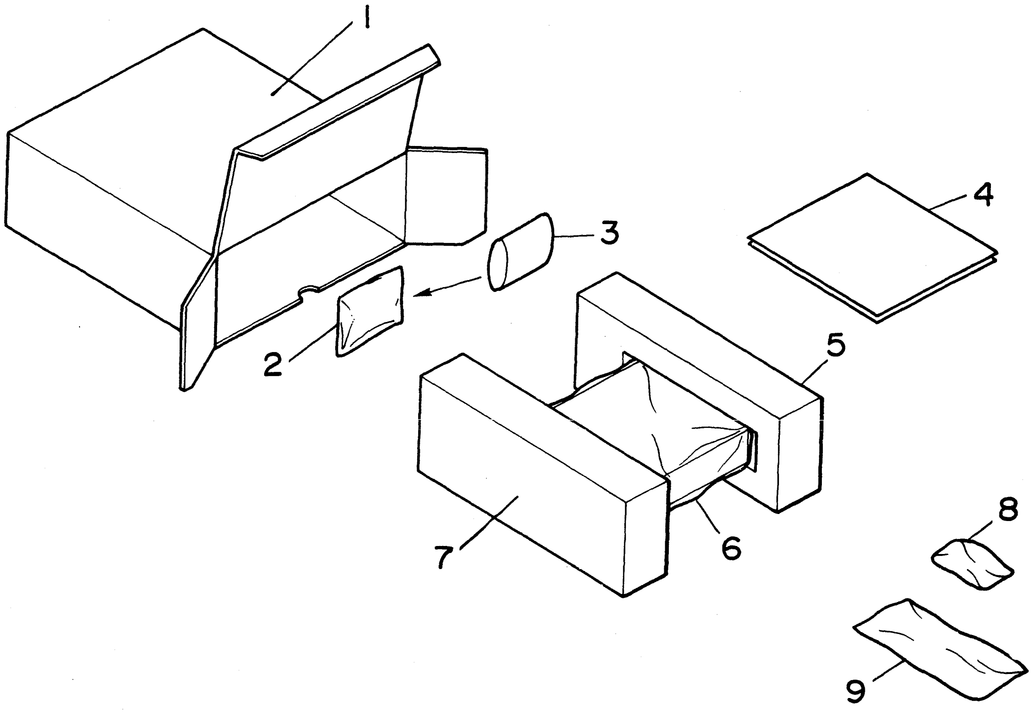

Fig. 21

• Parts List

Mark	No.	Description	Part No.
	1	Carton(WG)	CHG1600
		Carton(EW)	CHG1599
		Carton(ES)	CHG1601
	2	Remote Control Assy (ES)	CXA2958
	2-1	Cover(ES)	CZN3224
	3	Air Cushioned Bag(ES)	CEG1055
	4-1	Owner's Manual(WG)	CRD1294
		Owner's Manual(EW) (English, French, German, Spanish)	CRD1290
		Owner's Manual(EW) (Swedish, Norwegian, Dutch, Finnish)	CRD1291
		Owner's Manual(ES)	CRD1293
	4-2	Caution Card	
	4-3	Caution Card(WG)	
	4-4	Card(WG, EW)	
	4-5	Passport(WG)	
	4-6	Caution Card(ES)	
	5	Styrofoam(R)	CHP1217
	6	Cover	CEG-114

Mark	No.	Description	Part No.
	7	Styrofoam(L)	CHP1216
	8-1	Battery(ES)	CEX1006
	8-2	Fastener(ES) (Rough Surface)	CNM1716
	8-3	Fastener(ES) (Soft Surface)	CNM1717
	8-4	Battery(ES)(Back Up)	CEX1010
	9	Accessory Assy	CEA1448
	9-1	Cord(× 1)	CDE1289
	9-2	Bush(× 1)	CNV1009
	9-3	Strap(× 1)	CNF-111
	9-4	Screw(× 1)	CBA-102
	9-5	Screw(× 1)	CBA1002
	9-6	Nut(× 2)	NF50FMC